

**FLUOR FERNALD CLOSURE PLAN  
BASIS OF ESTIMATE**

**PBS-08  
NUCLEAR MATERIALS DISPOSITION**

**SEPTEMBER 2001**

**70000-PL-0008  
REVISION 1**



## Section 1: JNMS – Nuclear Materials Disposition Management

### 1.0 Narrative

#### 1.1 Overview

#### 1.2 Assumptions/Exclusions

##### 1.2.1 Assumptions

##### 1.2.2 Exclusions

##### 1.2.3 Government-Furnished Equipment/Services

#### 1.3 Drivers

#### 1.4 Project Physical Description

#### 1.5 Project Plan/Technical Scope and Quantification

##### 1.5.1 JNMSA - NMD/UWD Planning and Characterization

###### 1) Task #1 – Planning

###### 1.1)1 Plan/Scope - Planning

###### 1.1)2 Quantification - Planning

###### 2) Task #2 – Project Controls

###### 2.1)1 Plan/Scope – Planning

###### 2.1)2 Quantification – Project Controls

###### 3) Task #3 – Acquisitions

###### 3.1)1 Plan/Scope – Acquisitions

###### 3.1)2 Quantification - Acquisitions

###### 4) Task #4 – Administrative and Technical Support

###### 4.1)1 Plan/Scope – Administrative and Technical Support

###### 4.1)2 Quantification – Administrative and Technical Support

###### 5) Task #5 – Characterization

###### 5.1)1 Plan/Scope – Characterization

###### 5.1)2 Quantification - Characterization

##### ~~1.5.2 JNMSB – Safety Assessment~~

###### ~~1) Task #1 – Safety Assessment~~

###### ~~1.1) Subtask #1 – Safety Assessment~~

###### ~~1.1)1 Plan/Scope – Safety Assessment~~

###### ~~1.1)2 Quantification – Safety Assessment~~

### 2.0 Schedule

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#### 3.1 NMD/UWD Project Management/Support

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### 5.0 Risk Plan

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## Section 2: JNMP - Nuclear Materials Disposition

### 1.0 Narrative

#### 1.1 Overview

#### 1.2 Assumptions/Exclusions

##### 1.2.1 Assumptions

##### 1.2.2 Exclusions

##### 1.2.3 Government-Furnished Equipment/Services

#### 1.3 Drivers

#### 1.4 Project Physical Description

#### 1.5 Project Plan/Technical Scope and Quantification

##### 1.5.1 JNMPC - Compounds

###### 1) Task #1 – Planning

###### 2) Task #2 – Packaging

###### 2.1) Subtask #1 – Miscellaneous Depleted UF<sub>4</sub> Packaging

###### 2.1)1 Plan/Scope – Miscellaneous Depleted UF<sub>4</sub> Packaging

###### 2.1)2 Quantification – Miscellaneous Depleted UF<sub>4</sub> Packaging

###### 2.2) Subtask #2 – 1 % UO<sub>3</sub> (in 350-gram packages) Packaging

###### 2.2)1 Plan/Scope – 1 % UO<sub>3</sub> (in 350-gram packages) Packaging

###### 2.2)2 Quantification – 1 % UO<sub>3</sub> (in 350-gram packages) Packaging

###### 2.3) Subtask #3 – Enriched UF<sub>4</sub> Packaging

###### 2.3)1 Plan/Scope – Enriched UF<sub>4</sub> Packaging

###### 2.3)2 Quantification – Enriched UF<sub>4</sub> Packaging

###### 2.4) Subtask #4 – Miscellaneous Enriched $\leq 1\%$ U<sup>235</sup> Compounds Packaging

###### 2.4)1 Plan/Scope – Miscellaneous Enriched $\leq 1\%$ U<sup>235</sup> Compounds Packaging

###### 2.4)2 Quantification – Miscellaneous Enriched $\leq 1\%$ U<sup>235</sup> Compounds Packaging

###### 2.5) Subtask #5 - $> 1\%$ U<sup>235</sup> UO<sub>3</sub> (to be repackaged) Packaging

###### 2.5)1 Plan/Scope - $> 1\%$ U<sup>235</sup> UO<sub>3</sub> (to be repackaged) Packaging

###### 2.5)2 Quantification - $> 1\%$ U<sup>235</sup> UO<sub>3</sub> (to be repackaged) Packaging

###### 2.6) Subtask #6 – Shipping Compounds

###### 2.6)1 Plan/Scope – Shipping Compounds

###### 2.6)2 Quantification – Shipping Compounds

##### 1.5.2 JNMPM - Metal

###### 1) Task #1 – Planning

###### 2) Task #2 – Processing

###### 2.1) Subtask #1 – Processing Metal

###### 2.1)1 Plan/Scope – Processing Metal

###### 2.1)2 Quantification – Processing Metal



**Section 2: JNMP - Nuclear Materials Disposition (Continued)**

- 3) Task #3 – Packaging
  - 3.1) Subtask #1 – Normal and Depleted Metal Packaging
    - 3.1)1 Plan/Scope – Normal and Depleted Metal Packaging
    - 3.1)2 Quantification – Normal and Depleted Metal Packaging
  - 3.2) Subtask #2 – Miscellaneous Enriched Metal Packaging
    - 3.2)1 Plan/Scope – Miscellaneous Enriched Metal Packaging
    - 3.2)2 Quantification – Miscellaneous Enriched Metal Packaging
  - 3.3) Subtask #3 – Shipping Metal
    - 3.3)1 Plan/Scope – Shipping Metal
    - 3.3)2 Quantification – Shipping Metal
- 2.0 Schedule
- 3.0 Manpower Plans
  - 3.1 Compounds
  - 3.2 Metal
- 4.0 Estimate
- 5.0 Risk Plan

## Section 3: JUWP - Uranium Waste Disposition

### 1.0 Narrative

#### 1.1 Overview

#### 1.2 Assumptions/Exclusions

##### 1.2.1 Assumptions

##### 1.2.2 Exclusions

##### 1.2.3 Government-Furnished Equipment/Services

#### 1.3 Drivers

#### 1.4 Project Physical Description

#### 1.5 Project Plan/Technical Scope and Quantification

##### 1.5.1 JUWPA - Fissile Excepted and $\leq 1\%$ Compounds

###### 1) Task #1 - Planning

###### 2) Task #2 - Characterization

###### 3) Task #3 - Processing

###### 3.1) Subtask #1 - Miscellaneous Depleted UF<sub>4</sub> Processing

###### 3.1)1 Plan/Scope - Miscellaneous Depleted UF<sub>4</sub> Processing

###### 3.2) Subtask #2 - Reject Normal Compounds Processing

###### 3.2)1 Plan/Scope - Reject Normal Compounds Processing

###### 3.3) Subtask #3 - Depleted Compounds/Trash Processing

###### 3.3)1 Plan/Scope - Depleted Compounds/Trash Processing

###### 3.4) Subtask #4 - $\leq 1\%$ U<sup>235</sup> Enriched Compounds Processing

###### 3.4)1 Plan/Scope - $\leq 1\%$ U<sup>235</sup> Enriched Compounds Processing

###### 3.5) Subtask #5 - Reject $\leq 1\%$ U<sup>235</sup> U<sub>3</sub>O<sub>8</sub> Processing

###### 3.5)1 Plan/Scope - Reject $\leq 1\%$ U<sup>235</sup> U<sub>3</sub>O<sub>8</sub> Processing

###### 3.6) Subtask #6 - Reject $\leq 1\%$ U<sup>235</sup> Miscellaneous Compounds Processing

###### 3.6)1 Plan/Scope - Reject $\leq 1\%$ U<sup>235</sup> Miscellaneous Compounds Processing

###### 3.7) Subtask #7 - $> 1\%$ U<sup>235</sup> Enriched Fissile Excepted Compounds Processing

###### 3.7)1 Plan/Scope - $> 1\%$ U<sup>235</sup> Enriched Fissile Excepted Compounds Processing

###### 3.8) Task #3 Quantification

###### 4) Task #4 - Packaging

###### 4.1) Subtask #1 - Miscellaneous Depleted UF<sub>4</sub> Packaging

###### 4.1)1 Plan/Scope - Miscellaneous Depleted UF<sub>4</sub> Packaging

###### 4.1)2 Quantification - Miscellaneous Depleted UF<sub>4</sub> Packaging

###### 4.2) Subtask #2 - Reject Normal Compounds Packaging

###### 4.2)1 Plan/Scope - Reject Normal Compounds Packaging

###### 4.2)2 Quantification - Reject Normal Compounds Packaging

###### 4.3) Subtask #3 - Depleted Compounds/Trash Packaging

###### 4.3)1 Plan/Scope - Depleted Compounds/Trash Packaging

###### 4.3)2 Quantification - Depleted Compounds/Trash Packaging

### Section 3: JUWP - Uranium Waste Disposition (Continued)

- 4.4) Subtask #4 –  $\leq 1\%$   $U^{235}$  Enriched Compounds Packaging
  - 4.4)1 Plan/Scope –  $\leq 1\%$   $U^{235}$  Enriched Compounds Packaging
  - 4.4)2 Quantification –  $\leq 1\%$   $U^{235}$  Enriched Compounds Packaging
- 4.5) Subtask #5 – Reject  $\leq 1\%$   $U^{235}$   $U_3O_8$  Packaging
  - 4.5)1 Plan/Scope – Reject  $\leq 1\%$   $U^{235}$   $U_3O_8$  Packaging
  - 4.5)2 Quantification – Reject  $\leq 1\%$   $U^{235}$   $U_3O_8$  Packaging
- 4.6) Subtask #6 – Reject  $\leq 1\%$   $U^{235}$  Miscellaneous Compounds Packaging
  - 4.6)1 Plan/Scope – Reject  $\leq 1\%$   $U^{235}$  Miscellaneous Compounds Packaging
  - 4.6)2 Quantification – Reject  $\leq 1\%$   $U^{235}$  Miscellaneous Compounds Packaging
- 4.7) Subtask #7 –  $> 1\%$   $U^{235}$  Enriched Fissile Excepted Compounds Packaging
  - 4.7)1 Plan/Scope –  $> 1\%$   $U^{235}$  Enriched Fissile Excepted Compounds Packaging
  - 4.7)2 Quantification –  $> 1\%$   $U^{235}$  Enriched Fissile Excepted Compounds Packaging
- 5) Task #5 – Fissile Excepted and  $\leq 1\%$   $U^{235}$  Compounds Shipping
  - 5.1) Subtask #1 – Fissile Excepted and  $\leq 1\%$   $U^{235}$  Compounds Shipping
    - 5.1)1 Plan/Scope – Fissile Excepted and  $\leq 1\%$   $U^{235}$  Compounds Shipping
    - 5.1)2 Quantification – Fissile Excepted and  $\leq 1\%$   $U^{235}$  Compounds Shipping
- 1.5.2 JUWPB - Fissile Excepted and Depleted Metal
  - 1) Task #1 – Planning
  - 2) Task #2 – Characterization
  - 3) Task #3 – Processing
    - 3.1) Subtask #1 – Depleted Metal Processing
      - 3.1)1 Plan/Scope – Depleted Metal Processing
    - 3.2) Subtask #2 – Depleted Ingots and Derbies Processing (potentially pyrophoric)
      - 3.2)1 Plan/Scope – Depleted Ingots and Derbies Processing
    - 3.3) Subtask #3 – Enriched Fissile Excepted Metals Processing
      - 3.3)1 Plan/Scope – Enriched Fissile Excepted Metals Processing
    - 3.4) Subtask #4 – Reject Normal Metal Processing
      - 3.4)1 Plan/Scope – Reject Normal Metal Processing
    - 3.5) Subtask #5 – Reject Miscellaneous Depleted Metal Processing
      - 3.5)1 Plan/Scope – Reject Miscellaneous Depleted Metal Processing

**Section 3: JUWP - Uranium Waste Disposition (Continued)**

- 3.6) Task #3 Quantification
  - 4) Task #4 – Packaging
    - 4.1) Subtask #1 – Depleted Metal Packaging
      - 4.1)1 Plan/Scope – Depleted Metal Packaging
      - 4.1)2 Quantification – Depleted Metal Packaging
    - 4.2) Subtask #2 – Depleted Ingots and Derbies Processing (potentially pyrophoric)
      - 4.2)1 Plan/Scope – Depleted Ingots and Derbies Processing
      - 4.2)2 Quantification – Depleted Ingots and Derbies Processing
    - 4.3) Subtask #3 – Enriched Fissile Excepted Metals Packaging
      - 4.3)1 Plan/Scope – Enriched Fissile Excepted Metals Packaging
      - 4.3)2 Quantification – Enriched Fissile Excepted Metals Packaging
    - 4.4) Subtask #4 – Reject Normal Metal Packaging
      - 4.4)1 Plan/Scope – Reject Normal Metal Packaging
      - 4.4)2 Quantification – Reject Normal Metal Packaging
    - 4.5) Subtask #5 – Reject Miscellaneous Depleted Metal Packaging
      - 4.5)1 Plan/Scope – Reject Miscellaneous Depleted Metal Packaging
      - 4.5)2 Quantification – Reject Miscellaneous Depleted Metal Packaging/Loading Crew
  - 5) Task #5 – Fissile Excepted and Depleted Metal Shipping
    - 5.1) Subtask #1 – Fissile Excepted and Depleted Metal Shipping
      - 5.1)1 Plan/Scope – Fissile Excepted and Depleted Metal Shipping
      - 5.1)2 Quantification – Fissile Excepted and Depleted Metal Shipping
- 1.5.3 JUWPC - RCRA Compounds, T-Hoppers and Sealed Sources
- 1) Task #1 – Planning
  - 2) Task #2 – Characterization
  - 3) Task #3 – Processing
    - 3.1) Subtask #1 –  $> 1\%$   $U^{235}$  RCRA Compounds Processing
      - 3.1)1 Plan/Scope –  $> 1\%$   $U^{235}$  RCRA Compounds Processing
    - 3.2) Subtask #2 –  $\leq 1\%$   $U^{235}$  RCRA Compounds Processing
      - 3.2)1 Plan/Scope –  $\leq 1\%$   $U^{235}$  RCRA Compounds Processing
    - 3.3) Subtask #3 – RCRA T-Hoppers Processing
      - 3.3)1 Plan/Scope – RCRA T-Hoppers Processing
    - 3.4) Subtask #4 – Sealed Sources Processing
      - 3.4)1 Plan/Scope – Sealed Sources Processing
    - 3.5) Task #3 Quantification – RCRA Compounds, RCRA T-Hoppers, Sealed Sources Processing

### Section 3: JUWP - Uranium Waste Disposition (Continued)

- 4) Task #4 – Packaging
    - 4.1) Subtask #1 –  $> 1\%$   $U^{235}$  RCRA Compounds Packaging
      - 4.1)1 Plan/Scope –  $> 1\%$   $U^{235}$  RCRA Compounds Packaging
      - 4.1)2 Quantification –  $> 1\%$   $U^{235}$  RCRA Compounds Packaging
    - 4.2) Subtask #2 –  $\leq 1\%$   $U^{235}$  RCRA Compounds Packaging
      - 4.2)1 Plan/Scope –  $\leq 1\%$   $U^{235}$  RCRA Compounds Packaging
      - 4.2)2 Quantification –  $\leq 1\%$   $U^{235}$  RCRA Compounds Packaging
    - 4.3) Subtask #3 – T-Hoppers Packaging
      - 4.3)1 Plan/Scope – T-Hoppers Packaging
      - 4.3)2 Quantification – T-Hoppers Packaging
    - 4.4) Subtask #4 – Sealed Sources Packaging
      - 4.4)1 Plan/Scope – Sealed Sources Packaging
      - 4.4)2 Quantification – Sealed Sources Packaging
  - 5) Task #5 – RCRA Compounds, RCRA T-Hoppers and Sealed Sources Shipping
    - 5.1) Subtask #1 –  $> 1\%$   $U^{235}$  RCRA Compounds Shipping
      - 5.1)1 Plan/Scope –  $> 1\%$   $U^{235}$  RCRA Compounds Shipping
      - 5.1)2 Quantification –  $> 1\%$   $U^{235}$  RCRA Compounds Shipping
    - 5.2) Subtask #2 –  $< 1\%$   $U^{235}$  RCRA Compounds Shipping
      - 5.2)1 Plan/Scope –  $< 1\%$   $U^{235}$  RCRA Compounds Shipping
      - 5.2)2 Quantification –  $< 1\%$   $U^{235}$  RCRA Compounds Shipping
    - 5.3) Subtask #3 – RCRA Compounds, RCRA T-Hoppers and Sealed Sources Shipping
      - 5.1)1 Plan/Scope –  $< 1\%$   $U^{235}$  RCRA Compounds, RCRA T-Hoppers and Sealed Sources Shipping
      - 5.1)2 Quantification –  $< 1\%$   $U^{235}$  RCRA Compounds, RCRA T-Hoppers and Sealed Sources Shipping
- 1.5.4 JUWPD - Fissile Compounds
- 1) Task #1 – Planning
  - 2) Task #2 – Characterization
  - 3) Task #3 – Processing
    - 3.1) Subtask #1 –  $> 1\%$   $U^{235}$  Enriched Compounds Processing
      - 3.1)1 Plan/Scope –  $> 1\%$   $U^{235}$  Enriched Compounds Processing
      - 3.1)2 Quantification –  $> 1\%$   $U^{235}$  Enriched Compounds
    - 3.2) Subtask #4 – Reject  $> 1\%$   $U^{235}$   $U_3O_8$  Processing
      - 3.2)1 Plan/Scope – Reject  $> 1\%$   $U^{235}$   $U_3O_8$  Processing
      - 3.2)2 Quantification – Reject  $> 1\%$   $U^{235}$   $U_3O_8$
    - 3.3) Subtask #5 – Reject  $> 1\%$   $U^{235}$  Miscellaneous Compounds Processing

**Section 3: JUWP - Uranium Waste Disposition (Continued)**

- 3.3)1 Plan/Scope – Reject > 1 %  $U^{235}$  Miscellaneous Compounds Processing
- 3.3)2 Quantification - Reject > 1 %  $U^{235}$  Miscellaneous Compounds
- 3.4) Task #3 Quantification – Fissile Compounds Processing
- 4) Task #4 – Packaging
  - 4.1) Subtask #1 – > 1 %  $U^{235}$  Enriched Compounds Packaging
    - 4.1)1 Plan/Scope – > 1 %  $U^{235}$  Enriched Compounds Packaging
    - 4.1)2 Quantification – > 1 %  $U^{235}$  Enriched Compounds Packaging
  - 4.2) Subtask #4 – Reject > 1 %  $U^{235}$   $U_3O_8$  Packaging
    - 4.2)1 Plan/Scope – Reject > 1 %  $U^{235}$   $U_3O_8$  Packaging
    - 4.2)2 Quantification – Reject > 1 %  $U^{235}$   $U_3O_8$  Packaging
  - 4.3) Subtask #5 – Reject > 1 %  $U^{235}$  Miscellaneous Compounds Packaging
    - 4.3)1 Plan/Scope – Reject > 1 %  $U^{235}$  Miscellaneous Compounds Packaging
    - 4.3)2 Quantification – Reject > 1 %  $U^{235}$  Miscellaneous Compounds Packaging
- 5) Task #5 – Fissile Compounds Shipping
  - 5.1) Subtask #1 – Fissile Compounds Shipping
    - 5.1)1 Plan/Scope – Fissile Compounds Shipping
  - 5.2) Task #5 Quantification – Fissile Compounds Shipping
- 1.5.5 JUWPE - Fissile Metal
  - 1) Task #1 – Planning
  - 2) Task #2 – Characterization
  - 3) Task #3 – Processing
    - 3.1) Subtask #1 –  $\leq 1\%$   $U^{235}$  Enriched Metal Processing
      - 3.1)1 Plan/Scope –  $\leq 1\%$   $U^{235}$  Enriched Metal Processing
    - 3.2) Subtask #2 – > 1 %  $U^{235}$  Enriched Metal Processing
      - 3.2)1 Plan/Scope – > 1 %  $U^{235}$  Enriched Metal Processing
    - 3.3) Subtask #3 – 10 Containers of Reject Miscellaneous Enriched Metal Processing
      - 3.3)1 Plan/Scope – 10 Containers of Reject Miscellaneous Enriched Metal Processing
    - 3.4) Task #3 Quantification – Fissile Metal Processing

**Section 3: JUWP - Uranium Waste Disposition (Continued)**

- 4) Task #4 – Packaging
  - 4.1) Subtask #1 –  $\leq 1\%$   $U^{235}$  Enriched Metal Packaging
    - 4.1)1 Plan/Scope –  $\leq 1\%$   $U^{235}$  Enriched Metal Packaging
    - 4.1)2 Quantification –  $\leq 1\%$   $U^{235}$  Enriched Metal Packaging

- 4.2) Subtask #2 – > 1% U<sup>235</sup> Enriched Metal Packaging
  - 4.2)1 Plan/Scope – > 1% U<sup>235</sup> Enriched Metal Packaging
  - 4.2)2 Quantification – > 1% U<sup>235</sup> Enriched Metal Packaging
- 4.3) Subtask #3 – Reject Miscellaneous Enriched Metal Packaging
  - 4.3)1 Plan/Scope – Reject Miscellaneous Enriched Metal Packaging
  - 4.3)2 Quantification – Reject Miscellaneous Enriched Metal Packaging
- 5) Task #5 – Fissile Metal Shipping
  - 5.1) Subtask #1 – Fissile Metal Shipping
    - 5.1)1 Plan/Scope – Fissile Metal Shipping
    - 5.1)2 Quantification – Fissile Metal Shipping
- 2.0 Schedule
- 3.0 Manpower Plans
  - 3.1 Fissile Excepted - < 1% Compounds
  - 3.2 Fissile Excepted and Depleted Metals
  - 3.3 RCRA Materials
  - 3.4 Fissile Compounds
  - 3.5 Fissile Metal
- 4.0 Estimate
- 5.0 Risk Plan





**ACRONYM  
LIST**



## LIST OF ACRONYMS AND ABBREVIATIONS

ASR	Auditable Safety Record
BIO	Bases of Interim Operation
DOE	Department of Energy
DOE-FN	Department of Energy – Fernald
DOE-HQ	Department of Energy – Headquarters
DOT	Department of Transportation
FEMP	Fernald Environmental Management Project
FF	Fluor Fernald
HEPA	High Efficiency Particulate Air
IHA	Integrated Hazard Analysis
IM	Information Management
ISO	International Shipping Organization
LEL	Lower Explosive Limit
LOE	Level Of Effort
MA	Management Assessment
MTU	Metric Tons Uranium
NFS	Nuclear Fuel Services, Inc.
NISSMG	Nonactinide Isotopes and Sealed Sources Management Group
NMD	Nuclear Material Disposition
NMMSS	Nuclear Materials Management and Safeguards System
NSS	Nuclear and System Safety
NTS	Nevada Test Site
PAAA	Price-Anderson Amendments Act
PBS	Performance Baseline Schedule
PK	Process Knowledge
PPG	Program, Project, Group
PR	Process Requirement
RCRA	Resource Conservation and Recovery Act
SA	Safety Analysis
SA	Safety Assessment
SAR	Safety Analysis Report
SARP	Safety Analysis Report/Packaging
SBR	Safety Basis Requirement
SBWSC	Steel-Banded Wooden Shipping Container
SOT	System Operability Test
SS	System Safety
SSR	Standard Start-up Review
SWIFTS	Sitewide Waste Information Forecast and Tracking System
TOC	Thorium Overpack Container
TQP	Training and Qualification Plan
TSR	Technical Safety Requirement
UMD	Uranium Management Division (Portsmouth, Oh)
USQD/SE	Unreviewed Safety Question Determination/Safety Evaluation
UWD	Uranium Waste Disposition







**WBS DICTIONARY**  
**CONTROL ACCOUNT/CHARGE NUMBER**





U.S. DEPARTMENT OF ENERGY  
WORK BREAKDOWN STRUCTURE DICTIONARY  
PART II - ELEMENT DEFINITION

1. PROJECT TITLE  FEMP (DEFENSE)	2. DATE OF CONTRACT  12/01/2000
3. IDENTIFICATION NUMBER  DE-AC24-01OH20115	4. INDEX LINE NO.  66
5. WBS ELEMENT CODE  1.1.J	6. WBS ELEMENT TITLE  PBS 08 NUCLEAR MATERIALS
7. APPROVED CP NO.  ORIGINAL SCOPE PER CP# FY01-0115-0008-00	8. DATE OF CHANGES  12/01/2000
9. SYSTEM DESIGN DESCRIPTION  CERCLA/ACA	10. BUDGET AND REPORTING NUMBER  EW05H3080
<p>11. ELEMENT TASK DESCRIPTION</p> <p><b><u>a. ELEMENTS OF COST:</u></b></p> <p>Labor Materials Subcontracts ODCs</p> <p><b><u>b. TECHNICAL CONTENT:</u></b></p> <p>The Nuclear Materials Disposition (NMD) Project is responsible for identifying, characterizing, packaging, repackaging, shipping and disposition of nuclear product and uranium waste in the form of metals and compounds.</p> <p>This element allows for planning, characterization, treatability studies, packaging, preparation, consolidation, and shipment of nuclear materials to off-site locations. The scope is divided into nuclear product and uranium waste materials. The materials are segregated based on condition, state, and enrichment level, and will be processed, packaged, and dispositioned in accordance with appropriate Department Of Transportation (DOT) and off-site burial/storage site requirements.</p> <p><b><u>c. SCOPE OF WORK:</u></b></p> <p>The detailed scope of work of the NMD project is defined in Element Codes 1.1.J.A, 1.1.J.B, and 1.1.J.C. In general, these codes provide for the management, packaging, shipment, and disposition of nuclear product and uranium waste materials. Specifically, 1.1.J.A provides for the management, planning, and support activities pertaining to the characterization, packaging, repackaging and shipment of nuclear product and waste materials. The field activities for nuclear product and uranium waste materials are covered, respectively, under 1.1.J.B and 1.1.J.C.</p> <p>It should be noted that the term nuclear materials refers to nuclear materials</p>	

U.S. DEPARTMENT OF ENERGY  
WORK BREAKDOWN STRUCTURE DICTIONARY  
PART II - ELEMENT DEFINITION

1. PROJECT TITLE  FEMP (DEFENSE)		2. DATE OF CONTRACT  12/01/2000	
3. IDENTIFICATION NUMBER  DE-AC24-01OH20115		4. INDEX LINE NO.  66	
5. WBS ELEMENT CODE  1.1.J	6. WBS ELEMENT TITLE  PBS 08 NUCLEAR MATERIALS		
7. APPROVED CP NO.  ORIGINAL SCOPE PER CP# FY01-0115-0008-00		8. DATE OF CHANGES  12/01/2000	
9. SYSTEM DESIGN DESCRIPTION  CERCLA/ACA	10. BUDGET AND REPORTING NUMBER  EW05H3080		
11. ELEMENT TASK DESCRIPTION product and uranium waste.			

U.S. DEPARTMENT OF ENERGY  
WORK BREAKDOWN STRUCTURE DICTIONARY  
PART II - ELEMENT DEFINITION

1. PROJECT TITLE  FEMP (DEFENSE)	2. DATE OF CONTRACT  12/01/2000		
3. IDENTIFICATION NUMBER  DE-AC24-01OH20115		4. INDEX LINE NO.  67	
5. WBS ELEMENT CODE  1.1.J.A	6. WBS ELEMENT TITLE  MANAGEMENT		
7. APPROVED CP NO.  ORIGINAL SCOPE PER CP# FY01-0115-0008-00		8. DATE OF CHANGES  12/01/2000	
9. SYSTEM DESIGN DESCRIPTION  CERCLA/ACA	10. BUDGET AND REPORTING NUMBER  EW05H3080		
11. ELEMENT TASK DESCRIPTION  <div style="margin-top: 20px;"><b><u>a. ELEMENTS OF COST:</u></b>  Labor Materials Subcontracts ODCs</div> <div style="margin-top: 20px;"><b><u>b. TECHNICAL CONTENT:</u></b>  This control account provides for management and support of characterization, processing, packaging and disposition off site of the FEMP inventory of nuclear product and uranium waste. This control account also provides for treatability processing studies of nuclear product and uranium waste to determine the most cost-effective method of dispositioning the product material and uranium waste. The NMD Project will also support Technology Programs initiatives to identify and implement new and/or innovative technologies for materials treatment, handling, and shipping.</div> <div style="margin-top: 20px;"><b><u>c. SCOPE OF WORK:</u></b>  Activities include:<ul style="list-style-type: none"><li>• Project planning and support</li><li>• Characterization</li><li>• Treatability processing studies</li><li>• Technical Programs Initiatives support</li></ul></div>			

**WORK SCOPE DEFINITION**  
(Control Account)

1. PROJECT TITLE  FEMP (DEFENSE)		2. DATE  09/07/2001	Page 1
3. WBS ELEMENT CODE  1.1.J.A	4. WBS ELEMENT TITLE/NAME  MANAGEMENT		
5. PERFORMING DIV/DEPARTMENT CODE  46	6. ORIGINATOR NAME/PHONE  M. FROST/648-5685	7. WBS ELEMENT MANAGER  D. PAINE/648-5310	
8. BUDGET AND REPORTING NUMBER  EW05H3080	9. BUDGET TITLE  NUCLEAR MATERIALS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE?  ORIGINAL SCOPE PER CP# FY01-0115-0008-00		11. ESTIMATED START / COMPLETION DATE  12/2000 - 09/2009	
12. TASK IDENTIFICATION (CONTROL ACCOUNT)  JNMS	13. TASK DESCRIPTION (ONE LINE)  NUCLEAR MATERIAL MANAGEMENT		
14. ELEMENT TASK DESCRIPTION  <div style="margin-top: 20px;"><b><u>a. ELEMENTS OF COST:</u></b>  Labor Materials Subcontracts ODCs</div> <div style="margin-top: 20px;"><b><u>b. TECHNICAL CONTENT:</u></b>  This control account provides for management and support of characterization, processing, packaging and disposition off site of the FEMP inventory of nuclear product and uranium waste. This control account also provides for treatability processing studies of nuclear product and uranium waste to determine the most cost-effective method of dispositioning the product material and uranium waste. The NMD Project will also support Technology Programs initiatives to identify and implement new and/or innovative technologies for materials treatment, handling, and shipping.</div> <div style="margin-top: 20px;"><b><u>c. SCOPE OF WORK:</u></b>  Activities include:<ul style="list-style-type: none"><li>• Project planning and support</li><li>• Characterization</li><li>• Treatability processing studies</li><li>• Technical Programs Initiatives support</li></ul></div>			
Project Manager <i>David R...</i>	Control Account Manager <i>David R...</i>	Control Team Manager <i>Mary E Stone</i>	

**WORK SCOPE DEFINITION**  
(Control Account)

1. PROJECT TITLE  <b>FEMP (DEFENSE)</b>		2. DATE  <b>09/07/2001</b>	Page 2
3. WBS ELEMENT CODE  <b>1.1.J.A</b>	4. WBS ELEMENT TITLE/NAME  <b>MANAGEMENT</b>		
5. PERFORMING DIV/DEPARTMENT CODE  <b>46</b>	6. ORIGINATOR NAME/PHONE  <b>M. FROST/648-5685</b>	7. WBS ELEMENT MANAGER  <b>D. PAINE/648-5310</b>	
8. BUDGET AND REPORTING NUMBER  <b>EW05H3080</b>	9. BUDGET TITLE  <b>NUCLEAR MATERIALS</b>		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE?  <b>ORIGINAL SCOPE PER CP# FY01-0115-0008-00</b>		11. ESTIMATED START / COMPLETION DATE  <b>12/2000 - 09/2009</b>	
12. TASK IDENTIFICATION (CONTROL ACCOUNT)  <b>JNMS</b>	13. TASK DESCRIPTION (ONE LINE)  <b>NUCLEAR MATERIAL MANAGEMENT</b>		
14. ELEMENT TASK DESCRIPTION			

**d. WORK SPECIFICALLY EXCLUDED:**

- Packaging, preparation, consolidation, and shipment of nuclear product or uranium waste except to support treatability processing studies. This scope is covered under 1.1.J.B and 1.1.J.C.
- Routine maintenance of equipment and facilities. (covered in PBS 01)
- Programmatic MC&A. (covered in WBS Element 1.2.C)
- Costs associated with Public Affairs (covered in PBS 12)
- Confirmation measurements of nuclear material and monthly and annual reports required by DOE. (covered in WBS Element 1.2.C - Safeguards & Securities)
- Materials Controls and Accountability administration (covered in WBS Element 1.2.C)
- Warehousing, surveillance and annual inventory (covered in WBS Element 1.2.C)

**WORK SCOPE DEFINITION**  
(Work Package)

1. PROJECT TITLE  FEMP (DEFENSE)		2. DATE  09/07/2001	Page 1
3. WBS ELEMENT CODE  1.1.J.A	4. WBS ELEMENT TITLE/NAME  MANAGEMENT		
5. PERFORMING DIV/DEPARTMENT CODE  46	6. ORIGINATOR NAME/PHONE  M. FROST/648-5685	7. WBS ELEMENT MANAGER  D. PAINE/648-5310	
8. BUDGET AND REPORTING NUMBER  EW05H3080	9. BUDGET TITLE  NUCLEAR MATERIALS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE?  ORIGINAL SCOPE PER CP# FY01-0115-0008-00		11. ESTIMATED START / COMPLETION DATE  12/2000 - 12/2004	
12. TASK IDENTIFICATION (WORK PACKAGE)  JNMSA	13. TASK DESCRIPTION (ONE LINE)  NUCLEAR MATERIAL MANAGEMENT		
14. ELEMENT TASK DESCRIPTION  <div style="margin-top: 20px;"><b><u>a. ELEMENTS OF COST:</u></b>  Labor Materials Subcontracts ODCs</div> <div style="margin-top: 20px;"><b><u>b. TECHNICAL CONTENT:</u></b>  This work package provides for management and support of characterization, processing, packaging and disposition off-site of the Fernald Environmental Management Project (FEMP) inventory of nuclear product and uranium waste. This charge number provides for treatability processing studies of nuclear product and uranium waste to determine the most cost-effective method of dispositioning these streams. Under this account, the NMD Project will also support Technology Programs initiatives to identify and implement new and/or innovative technologies for waste treatment, handling, and shipping.  The earned value method for this work package is level of effort.</div> <div style="margin-top: 20px;"><b><u>c. SCOPE OF WORK:</u></b>  Activities include:<ul style="list-style-type: none"><li>• Preparation of fiscal year work plans, schedules, and cost plans.</li><li>• Procurement of materials and supplies needed to properly package nuclear product and uranium waste material for shipment to an off-site location.</li><li>• Identification and generation of permits for handling, storage, and shipment of nuclear materials.</li><li>• Characterization of uranium waste inventory to support off-site shipment and</li></ul></div>			
Project Manager <i>Dale Rini</i>	Control Account Manager <i>Dale Rini</i>	Control Team Manager <i>Mary E Stone</i>	

# WORK SCOPE DEFINITION (Work Package)

1. PROJECT TITLE  <b>FEMP (DEFENSE)</b>		2. DATE  <b>09/07/2001</b>	Page 2
3. WBS ELEMENT CODE  <b>1.1.J.A</b>	4. WBS ELEMENT TITLE/NAME  <b>MANAGEMENT</b>		
5. PERFORMING DIV/DEPARTMENT CODE  <b>46</b>	6. ORIGINATOR NAME/PHONE  <b>M. FROST/648-5685</b>	7. WBS ELEMENT MANAGER  <b>D. PAINE/648-5310</b>	
8. BUDGET AND REPORTING NUMBER  <b>EW05H3080</b>	9. BUDGET TITLE  <b>NUCLEAR MATERIALS</b>		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE?  <b>ORIGINAL SCOPE PER CP# FY01-0115-0008-00</b>		11. ESTIMATED START / COMPLETION DATE  <b>12/2000 - 12/2004</b>	
12. TASK IDENTIFICATION (WORK PACKAGE)  <b>JNMSA</b>	13. TASK DESCRIPTION (ONE LINE)  <b>NUCLEAR MATERIAL MANAGEMENT</b>		
14. ELEMENT TASK DESCRIPTION  disposal. <ul style="list-style-type: none"> <li>· Attendance of required training.</li> <li>· Technical assessment of material to package and ship.</li> <li>· Administrative program support.</li> <li>· Technical program support.</li> <li>· Maintenance of the Sitewide Waste Information Forecasting and Tracking System (SWIFTS) database for NMD/UWD.</li> <li>· Planning for the removal of normal, depleted, and enriched uranium materials and wastes from site.</li> <li>· Packaging, preparation, consolidation, and shipment of nuclear materials and uranium waste to an off-site location to support treatability processing studies only.</li> <li>· General project support operations such as procedure and task order development, technical safety board reviews, and DOT determinations.</li> </ul> <b><u>d. WORK SPECIFICALLY EXCLUDED:</u></b>  <ul style="list-style-type: none"> <li>· Packaging, preparation, consolidation, and shipment of nuclear product or uranium waste except to support treatability processing studies. This scope is covered under 1.1.J.B and 1.1.J.C.</li> <li>· Routine maintenance of equipment and facilities. (covered in PBS 01)</li> <li>· Costs associated with Public Affairs (covered in PBS 12)</li> <li>· Confirmation measurements of nuclear material and monthly and annual reports required by DOE. (covered in WBS Element 1.2.C)</li> <li>· Material Controls and Accountability Programmatic. (covered in WBS Element 1.2.C)</li> <li>· Annual nuclear material inventory. (covered in WBS Element 1.2.C)</li> <li>· Nuclear material surveillance and security. (covered in WBS Element 1.2.C)</li> </ul>			





## **SECTION 1**

### **1.0 NARRATIVE**



1. PROJECT TITLE: NUCLEAR MATERIALS DISPOSITION	2. DATE: 09/10/01	3. PBS#: 08
4. WBS ELEMENT CODE: 1.1.J.A.	5. WBS ELEMENT TITLE: PROJECT MANAGEMENT	
6. CAM NAME/ PHONE: DON PAINE/ROBERT SCHULTEN	7. CAM SIGNATURE:	
8. ORIGINAL/ CHANGE SCOPE/ PER CP#:	9.CONTROL ACCOUNT: JNMS	

## SECTION 1: JNMS – NUCLEAR MATERIALS DISPOSITION MANAGEMENT

### 1.0 NARRATIVE

This Control Account defines the scope of work required to perform (execute), manage, provide oversight, plan and administer the Nuclear Materials Disposition Division.

#### 1.1 OVERVIEW

Charge number JNMSA provides for management and support of characterization, processing, packaging and disposition off-site of the Fernald Environmental Management Project (FEMP) inventory of nuclear product and uranium waste. This charge number provides for treatability processing studies of nuclear product and uranium waste to determine the most cost-effective method of dispositioning these streams. Under this account, the NMD Project will also support continued initiatives to identify and implement new and/or innovative technologies for waste treatment, handling, and shipping in order to reduce cost and/or accelerate schedule and/or reduce risk for site completion. This includes supporting Technology Programs efforts and will require attending technology demonstrations, validating technologies for use, and reviewing proposals.

~~Charge account JNMSB provides for management of site projects safety analysis support .~~

#### 1.2 ASSUMPTIONS/EXCLUSIONS

##### 1.2.1 Assumptions

- 1) Upon completion of the project scope, six months will be required to complete project closeout activities.
- 2) External reporting requirements are not increased.
- 3) The Waste Generator Services Division Project Execution Plan, workforce, task order system, and procedures will be used.
- 4) The Nuclear Material and Uranium Waste Disposition Projects are completed as scheduled.

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- 5) ~~Safety Analysis is a Level of Effort organization using the support organization format.~~
- 6) ~~Safety Analyses are conducted in this organization.~~
- 7) No changes in surveillance requirements are expected.

#### 1.2.2 Exclusions

- 1) Packaging and shipping of product materials and uranium waste are excluded except as needed to support treatability studies mentioned above.
- 2) ~~Packaging and shipping of nuclear materials declared waste are excluded.~~
- 3) ~~Safety Analysis Programmatic is excluded. Covered in PBS12.~~
- 4) ~~Costs associated with relocating new employees into the Cincinnati area are excluded. Covered in PBS12~~
- 5) Costs associated with Public Affairs are excluded.
- 6) Material Controls and Accountability administration is excluded. Covered in Non-Defense funding (WBS 1.2.B)
- 7) ~~Warehousing, surveillance, and annual inventory is excluded. Covered in Non-Defense funding (WBS 1.2.C)~~

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#### 1.2.3 Government Services and Equipment

None

#### 1.3 DRIVERS

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No external events will directly impact the beginning of work. ~~The external drivers listed below are associated with Safety Analysis activities. They do not affect the start date, but may have impacts on the implementation schedule.~~

- 1) ~~DOE Order 5480.21, Unreviewed Safety Questions~~
- 2) ~~DOE Order 5480.22, Technical Safety Requirements~~
- 3) ~~DOE Order 5480.23, Nuclear Safety Analysis Reports~~
- 4) ~~DOE Order 420.1, Facility Safety, Contractor Requirements Document~~

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5) ~~10 CFR 820, Procedural Rules for DOE Nuclear Activities~~

6) ~~10 CFR 830, Nuclear Safety Management~~

#### 1.4 PROJECT PHYSICAL DESCRIPTION

The JNMS account provides for the management and support of characterization, processing, packaging and disposition off-site of the FEMP inventory of nuclear product and uranium waste. ~~This account also provides for site project safety analysis support.~~

#### 1.5 PROJECT PLAN/TECHNICAL SCOPE AND QUANTIFICATION PLAN

~~Planning and characterization activities are separate from safety assessment activities under the JNMS control account. The following sections describe the activities covered under each charge number.~~

##### 1.5.1 JNMSA - NMD/UWD Planning and Characterization

The JNMSA charge number provides for planning and characterization of depleted, normal and enriched uranium materials, in various physical states, that are currently stored at the FEMP for off-site disposition. All activities pertaining to the implementation of NMD and UWD planning are covered under the JNMSA charge number, including planning, project controls, acquisitions, administrative and technical support, characterization, and development and revision of documents directing overall work processes. Specific activities are listed below.

##### 1) Task #1 - Planning

##### 1.1)1 Plan/Scope - Planning

Removal of normal, depleted, and enriched nuclear material and uranium waste from site will be planned under this account. Specifically, these activities include evaluation of materials and supplies needed to properly process, package, and ship nuclear product and uranium waste, as well as evaluation of facilities needed to perform processing, packaging, storage, and future use options. There are seven product streams and 24 waste streams to plan for safe, quality, least cost disposition. These streams total approximately 13,700 containers of material on the Plant 1 Pad. The project will investigate any feasible technologies or waste disposition options that are now or may become available to attempt to reduce project cost and/or schedule. In further support of this effort, the project will be working with the Technology Programs group to investigate alternate methods for treating, packaging, and disposal of the material. Expected support for these efforts will require project representatives to travel to off-site locations for demonstrations and meetings on developing technologies. Expected travel is two trips to DOE Ohio offices, one trip to DOE Headquarters, and one trip to a vendor site for two project representatives each year over the next three years.

Additional travel will be required for quality assurance/ quality control visits to vendors and for inspectors to maintain their certifications. Vendor travel will consist of two visits per year to each of the three container type vendors for two inspectors. Two visits per year will also be required to equipment manufacturers for a total of eight trips per year for two people at \$2,000 per person per trip. Three certification trips per year will be required for the QC Lead at \$1,500 per trip.

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The project will support studies and testing by Nuclear Fuel Services, Erwin, Tennessee, to identify and implement process strategies for dispositioning orphan streams of uranium material. This will include characterizing the materials, generating test plans and conducting processing tests using actual materials to convert the streams to final homogeneous forms that meet off-spec nuclear fuel program and/or NTS acceptance criteria, and identifying the most efficient processing scenarios. Also included will be activities required to bring the NFS Industrial Park Facility to a state of readiness to receive Fernald Low Enriched Oxides for storage prior to processing and/or disposition. This effort will complete qualification of the material as a potential blendstock for a future off-spec nuclear fuel program.

The project will continue to explore alternative methods of treatment and disposition in order to reduce cost and accelerate schedule for both product and waste inventories.

#### 1.1)2 Quantification – Planning

Classification	Average FTE	Total Man-Hours
Tech/Program support rep	1.0	5,712
Proj support mgr	1.0	4,946
Waste engineer	2	11,154
Project mgr	1.0	7,425
Waste mgr	1.6	9,019
Total Man-Hours:		30,831
ODC (@\$0.298/mh)		\$9,188

\*note: ODC rate is from Project Controls data less Laundry

#### 2) Task #2 - Project Controls

##### 2.1)1 Plan/Scope - Project Controls

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Project controls activities covered under this account will include preparation of fiscal year work plans, schedules, and cost plans, as well as tracking planned activities and preparing the monthly, quarterly, and annual reports required by DOE. This is a Level of Effort activity that will continue through the duration of field activities plus six months for project closeout. The Engineer/Construction Technician assists in producing reports and will not be required for the duration of field activities. The Scheduler will be required for the

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duration of field activities. The Cost Analyst will be required to prepare project close-out documentation as well as supporting the direct field activities. The project activities will be reflected in a detailed operations schedule which will indicate all needed activities, both administrative and operational, to execute the project. This schedule will be updated weekly reflecting actual field progress based on field observation and evaluation and review of daily reports. This detailed schedule will be the basis for the project baseline schedule monthly update. As needed, special schedules will be generated to control specific items, such as start-up activities. "What-if" schedules may be generated to compare and contrast different approaches to handling different streams, or to compare different disposition technologies in order to investigate means to reduce schedule and budget. Physical quantities of material characterized, processed, packaged, and shipped will be collected monthly for earned value computation and graphics will be generated to compare actual progress and costs to the baseline. Project costs will be collected and analyzed to assure compliance with the baseline. Monthly variance analyses will be performed, both on schedule and cost. Based on these analyses, project execution may be adjusted to assure the project remains within the baseline and can take advantage of any opportunity to reduce cost and shorten schedule while maintaining safety and quality. Changes will be tracked and change proposals will be prepared if necessary. One possible change proposal will ensue if there is a sale of nuclear material to a private sector customer. Fluor Fernald has committed to DOE-FN and the Office of the Inspector General that for any future sale of material to the private sector, the work effort and the revenues will be tracked separately.

## 2.1)2 Quantification - Project Controls

Classification	Average FTE	Duration (Quarters)	Total Man-Hours
Cost Analyst	1.0	14	6,114
Scheduler	1.0	12	5,241
Eng & Const Tech	0.1	9	393
Total Man-Hours:			11,748
ODC (@\$0.298/mh)			\$3,500

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## 3) Task #3 - Acquisitions

### 3.1)1 Plan/Scope - Acquisitions

Activities related to safe storage, packaging, and shipping nuclear materials and uranium waste include both evaluation of facilities and acquisition of materials, and will be performed under the JNMSA charge number. Procurement of packaging materials and equipment necessary for safely shipping the current inventory is also included under the JNMSA charge number. ~~Acquisitions will also support acquiring any of the items or technologies identified by the Technology Programs activities. Container procurement will be the major activity that Acquisitions will support.~~ Shipping containers is a major portion

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of the cost for this project. The following table summarizes the containers and packing materials expected to be procured. The actual costs are estimated in the direct accounts and are detailed in Exhibit 5.

Expected number of containers and materials to be procured:

Container type	Number	Unit price	Total cost
30 gallon drum	8,511	\$34.14	\$290,565
55 gallon drum	10,711	\$53.21	\$569,932
85 gallon drum	404	\$66.65	\$26,926
SBWSC	250	\$515.00	\$128,750
Wooden boxes	1,550	\$200.00	\$310,000
TOC type container	277	\$1270.00	\$351,790
ISO container	136	\$2,000	\$272,000
Pallets	988	\$86.65	\$85,610
Vent/burnout plugs	19,304	\$28.86	\$557,132
Absorbent	2,241	\$120.00	\$268,920
Dunnage	334	\$100.00	\$33,400
<b>Total:</b>			<b>\$2,895,025</b>

These material costs do not include taxes.

### 3.1)2 Quantification — Acquisitions

Classification	Average FTE	Duration (Quarters)	Total Man-Hours
Buyer	0.5	17	3,712
<b>Total Man-Hours:</b>			<b>3,712</b>
<b>ODC (@\$0.298/mh)</b>			<b>\$1,106</b>

## 4) Task #4 - Administrative and Technical Support

### 4.1)1 Plan/Scope - Administrative and Technical Support

Regulatory/compliance activities covered under JNMSA include identifying and obtaining permits for handling, storage, and shipment of nuclear materials and uranium waste. Technical support activities covered under JNMSA include technical assessment of material and waste to package and ship, technical program support, and tracking nuclear material movements. Under this charge number, a representative portion of product and/or uranium waste will be packaged and shipped to a facility for treatability studies. During these studies, treatability processing such as calcination, blending, and extraction will be tried and evaluated to determine disposition options. Administrative program support will be performed under JNMSA.

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Documentation related to NMD activities will be developed and revised under JNMSA. This includes work instructions, safety plans and reports, and environmental assessment documents.

Task orders and work orders will also be developed under this account. Task orders will be written for each work activity. The task orders will include detailed work instructions that fully define the expected steps of the activity, the required results, and the inventory that is associated with the activity. The project expects to write four task orders for each waste or product stream in order to fully cover all required activities for processing, packaging, and shipping the material. The project expects the task orders will require three revisions to add inventory and to incorporate lessons learned. Work requests will be generated for any maintenance support needed. The project has averaged 25 work orders and 100 work tickets per year and expects this level to be maintained throughout the life of the project.

The Sitewide Waste Information Forecasting and Tracking System (SWIFTS) data for NMD/UWD will also be maintained under this charge number. All containers that are repackaged and shipped require SWIFTS to be updated to reflect the changes. Also required are changes in the inventory, such as product containers being rejected and becoming waste. Each of the approximately 13,700 containers will require attention in SWIFTS.

#### 4.1)2 Quantification - Administrative and Technical Support

Classification	Average FTE	Total Man-Hours
R1- Clerk	2.0	10,766
F08- Engineer	0.7	2,544
002 Engineer, process & startup	1.0	4,946
R1- Executive admin	1.0	7,425
F08- Material Prep control rep	1.0	7,425
001 QC Mgr	1.0	4,946
R1- Rad Eng	0.9	4,717
F08- Tech Writer	1.0	5,241
003 Tech/Program support rep	4.7	26,850
R1- Waste Engineer	2.0	10,457
	<b>Total Man-Hours:</b>	<b>65,226</b>
	<b>ODC (@\$0.298/mh)</b>	<b>\$19,437</b>

## 5) Task #5 - Characterization

### 5.1)1 Plan/Scope - Characterization

All waste material and reject product material will require characterization prior to shipping to the Nevada Test Site (NTS) or to an approved treatment/disposal facility. The materials in the current inventory that require characterization consist of 1,751 containers of fissile excepted and depleted metal, 438 containers of fissile metal, 4,031 containers of fissile excepted and  $< 1\%$  compounds, 2,289 containers of fissile compounds, 388 containers of RCRA compounds of various enrichments, two T-Hoppers and 624 sealed sources. This includes currently forecasted reject product material.

The first step of characterization is defining the inventory. The UWD Project is establishing the campaigns and submitting them to the Process Knowledge (PK) Team for review. After the PK Team reviews the campaigns, they will submit their recommendations in an assessment letter issued to the UWD Project. The project will review the assessment, adjust the campaigns as necessary, and obtain preliminary approval from the UWD Project Manager. The project finalized the inventory for Sitewide Waste Information Forecast and Tracking System (SWIFTS) Project Program Group (PPG) identification and submitted it to Information Management, who locked the inventory into SWIFTS for inventory tracking. The project will then develop the final campaign packages based on the tagged inventory and submit them to characterization personnel. Characterization personnel will determine if sufficient process knowledge exists on these campaign packages and will complete Radiological Checklists. Characterization personnel will develop an NTS Waste Profile that will be submitted to the project for comment and review. Upon completion, the NTS Waste Profile will be submitted to NTS for approval. Final characterization will be performed during material packaging.

In order to properly characterize the material for disposal, the project will verify existing data on the container inventory and develop a waste campaign strategy. This includes reviewing the adequacy of the current Material Evaluations Forms (MEF) and acquiring supplemental information as needed through archived records searches. The MEF files will be amended as needed and a cross-reference of supplements to the records will be developed. This constitutes a campaign turnover package which will be provided to the Process Knowledge Team for review and comment. There are expected to be 61 campaigns in JUWPA, 23 in JUWPB, 19 in JUWPC, 15 in JUWPD, and 27 in JUWPE for a total of 145 campaign turnover packages to be researched, compiled, and approved.

The project will assist in developing four waste profiles for shipment to the disposal facilities.

The 438 containers of waste fissile metals will be visually inspected, measured, and photographed in their current configuration prior to initiation of packaging to develop data to finalize requirements for handling and shipping, including the total number of shipping containers needed. Other materials will be photographed and inspected as a part of the

repacking operations. This data will provide input needed to complete the Absorbent Determination that is required for the shipping container. This data will also assist Shipping Services in determining DOT compliance and in completing shipping paperwork. The 388 RCRA containers will require sampling and analysis to determine how they will be disposed. The project expects to be able to utilize the sample and analysis data to have the RCRA characteristics removed from all of this material. Preliminary evaluation has indicated that the material is RCRA for items that are not necessarily credible considering the material types.

#### 5.1)2 Quantification - Characterization

Classification	Average FTE	Duration (Quarters)	Total Man-Hours
Waste engineer	2.7	12	14,151
Total Man-Hours:			14,151
ODC (@\$0.298/mh)			\$4,217

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#### 1.5.2 JNMSB - Safety Assessment

##### 1) Task #1 - Safety Assessment

##### 1.1)1 Plan/Scope - Safety Assessment

~~The JNMSB charge number provides for all safety assessment activities pertaining to the FEMP projects. These activities include management and administration of the FEMP Safety Analysis program. This charge number provides for direction, technical support, review and approval of FF safety analysis and related activities designed to maintain compliance with Contract No. DE AC24-01OH20115, specifically S/RID Functional Area 9, which contains DOE Orders 5480.21, 5480.22, 5480.23, 420.1, and applicable consensus standards. Technical expertise and services will be provided to the Nuclear Systems Safety (NSS) Functional Area Manager in maintaining NSS requirements, which require that facilities and associated activities at the FEMP be the subject of safety analyses. This account also provides for management and oversight of the implementation of the Fluor Fernald System Safety (SS) program.~~

~~Under JNMSB, the Safety Assessment Group will maintain, implement, and administer the FEMP Safety Analysis Program. Related activities include preparing Safety Analysis Reports (SARs), Technical Safety Requirements (TSRs), Safety Basis Requirements (SBRs), Process Requirements (PRs), and Bases of Interim Operations (BIOs). Safety Assessments (SAs) and Auditable Safety Records (ASRs), including reviews, revisions, and upgrades, will also be prepared under this account. In addition, reviews of technical and administrative documents will also be performed under this charge number. Price Anderson Amendments Act documentation for the Safety Analysis Programs (10 CFR Part 830 Sections 110, 112, and 320) will be prepared as required under JNMSB.~~

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~~Documents routinely generated by the Safety Analysis group yearly include 95 Unreviewed Safety Question screens, 22 Unreviewed Safety Question determinations, 48 Safety Basis Document reviews, 24 Nuclear Safety Operational Authorizations, 10 Criticality Safety Analyses, 13 calculations, and 62 surveillances. The group also maintains 32 procedures, provides review for procedures and task orders, and is an active participant in the Technical Review Board (TRB) and the Independent Safety Review Committee (ISRC).~~

~~1.1)2 Quantification Safety Assessment~~

<b>Classification</b>	<b>Average FTE</b>	<b>Duration (Quarters)</b>	<b>Total Man-Hours</b>
<del>Waste engineer</del>	<del>3.7</del>	<del>34</del>	<del>54,943</del>
<b>Total Man-Hours:</b>			<b>54,943</b>
<b>ODC (@\$0.298/mh)</b>			<b>\$16,373</b>

# Nuclear Material Disposition Project Status Chart, Compounds

Exhibit 1

No.	Description from NMD Disposition Summary	*Containers Reviewed	Project Name	Subproject Name	Charge Number	**Total Containers	Active Containers	Containers Shipped
3	Normal Compounds 15,301.3 U pounds	57	NORMAL COMPOUNDS NORMAL COMPOUNDS (RTS)		JNMP3 JNMP6	46	3 0	1
11	Misc. Depleted UF4	53	MISC. DEPLETED UF4 (NTS IF WASTED)		JNMP3	54	54	0
12A	> 1% UO3	2,479	> 1% UO3 (RTS) NEEDS REPACKAGED		JNMP6	2,469	1,632	560
12B	> 1% UO3	240	> 1% UO3		JNMP2	240	240	
			> 1% UO3 (RTS)		JNMP6		277	
16	> 1% UF4	1,455	> 1% UF4, CATEGORY I		JNMP2	522	522	0
			> 1% UF4, CATEGORY II		JNMP2	38	38	
18	< = 1% U308	1,360	< = 1.00% U308 CATEGORY I		JNMP3	1,358	0	822
19	Misc. Enr. Comp < = 1% (NTS if wasted)	156	MISC. ENR. COMP < = 1%, CATEGORY I MISC. ENR. COMP. < = 1%, CATEGORY II MISC. ENR. COMP. < = 1%, CATEGORY III		JNMP3 JNMP3 JNMP3	98 62 3	98 62 3	0
27	DEPLETED UF4 (HOLD BACK)	94	DEPLETED UF4 (HOLD BACK) DEP. UF4 IN TOC'S (RTS)		MUWD5 JNMP6	96	0 2	94 (19 TOCs)

\* Number of containers originally reviewed by the 99 Replan Task Team.

\*\* Container count may change from original due to Program Project Group moves, repack or unpack activities.

\*\*\* Due to repack/unpack or decanting activities, container count may increase/decrease; therefore U-pounds shipped will be noted.

Indicates the project is complete.

REVISED 12/14/2000

# Nuclear Material Disposition Project Status Chart, Metal

## Exhibit 1, continued

No.	Description from NMD Disposition Summary	*Containers Reviewed	Project Name	Subproject Name	Charge Number	**Total Containers	Active Containers	Containers Shipped
2	Drums Normal Metal 277,799.7 U pounds	378	DRUMS/SKIDS NORMAL METAL		JNMP5	378	3	57 ***231,236.6
			DRUMS/SKIDS NORMAL METAL (RTS)		JNMP6		4	
5	Depleted Ingots (Skids/Drums) 67,832.8 U pounds	56	DEPLETED INGOTS (SKIDS/DRUMS)		JNMP5	56	8	7
			DEPLETED INGOTS (SKIDS/DRUMS) (RTS)		JNMP6		7	***44,866.0
7	Misc. Depleted Metal 33,358.9 U pounds	33	MISC. DEPLETED METAL		JNMP5	35	3	4
			MISC. DEPLETED METAL (RTS)		JNMP6		1	***17,855
13	> 1% Ingots	28	> 1% INGOTS		JNMP5	28	3	25
			> 1% INGOTS (RTS)		JNMP6		0	
15	Misc. Enriched Metal	595	MISC. ENRICHED METAL, CATEGORY I		JNMP5	119	119	0
			MISC. ENRICHED METAL, CATEGORY II		JNMP5	103	103	
			MISC. ENRICHED METAL, CATEGORY III		JNMP5	122	122	
			MISC. ENRICHED METAL, CATEGORY IV		JNMP5	35	35	
			BNFL-2ND CONTRACT (ENRICHED METAL)		JNMP5	219	219	

\* Number of containers originally reviewed by the 99 Replan Task Team.

Nuclear Material Disposition Project Status Chart, Rejected  
[Planned for disposition under UWD after waste declaration]

Exhibit 1, continued

No.	Description from NMD Disposition Summary	*Containers Reviewed	Project Name	Subproject Name	Charge Number	**Total Containers	Active Containers	Containers Shipped
1	Normal Ingots/Derbies		NORMAL DERBIES FOR ORO (RTS)		JNMP6		1	
3	Normal Compounds		NORMAL COMPOUNDS	REJECT WET	JNMP3		21	
			NORMAL COMPOUNDS	REJECT SOLID	JNMP3		3	
			NORMAL COMPOUNDS	REJECT OTHER	JNMP3		6	
9	Depleted UF4	14,488	DEP. UF4 FOR ORO	REJECT SOLID	JNMP1	14,486	8	14,478 (512 TOCs)
17	> 1% U308	664	> 1% U308, CATEGORY I		JNMP2	217	217	
			> 1% U308, CATEGORY II		JNMP2	402	402	
			> 1% U308, CATEGORY III		JNMP2	45	45	
18	< = 1% U308	536	< = 1.00% U308 CATEGORY I	REJECT WET	JNMP3		97	
			< = 1.00% U308 CATEGORY I	REJECT SOLID	JNMP3		19	
			< = 1.00% U308 CATEGORY I	REJECT OTHER	JNMP3		18	
			< = 1.00% U308 CATEGORY II		JNMP3		0	
			< = 1.00% U308 CATEGORY II	REJECT WET	JNMP3		27	
			< = 1.00% U308 CATEGORY II	REJECT SOLID	JNMP3		5	
			< = 1.00% U308 CATEGORY II	REJECT OTHER	JNMP3		3	
			< = 1.00% U308 CATEGORY III 822/154		JNMP3		0	
			< = 1.00% U308 CATEGORY III 822/154	REJECT WET	JNMP3		30	
			< = 1.00% U308 CATEGORY III 822/154	REJECT SOLID	JNMP3		15	
			< = 1.00% U308 CATEGORY III 822/154	REJECT OTHER	JNMP3		2	
			< = 1.00% U308 CATEGORY III EXCL 822/154		JNMP3		6	
			< = 1.00% U308 CATEGORY III EXCL 822/154	REJECT WET	JNMP3		60	
			< = 1.00% U308 CATEGORY III EXCL 822/154	REJECT SOLID	JNMP3		22	
			< = 1.00% U308 CATEGORY III EXCL 822/154	REJECT OTHER	JNMP3		20	
			< = 1.00% U308 CATEGORY IV	REJECT OTHER	JNMP3		201	
			< = 1.00% U308 CATEGORY IV	REJECT WET	JNMP3		11	
			< = 1.00% U308 (RTS)		JNMP6		0	
20	Misc. Enriched Comp > 1%	91	MISC. ENRICHED COMP > 1%, CATEGORY I		JNMP2	115	115	0
			MISC. ENRICHED COMP > 1%, CATEGORY II		JNMP2	63	63	
			MISC. ENRICHED COMP > 1%, CATEGORY IIA		JNMP2	2	2	
2	Drums Normal Metal		DRUMS/SKIDS NORMAL METAL	REJECT	JNMP5		34	
7	Misc. Depleted Metal		MISC. DEPLETED METAL	REJECT	JNMP5		20	

Nuclear Material Disposition Project Status Chart, Completed

Exhibit 1, continued

No.	Description from NMD Disposition Summary	*Containers Reviewed	Project Name	Subproject Name	Charge Number	**Total Containers	Active Containers	Containers Shipped
1	Normal Ingots/Derbies	117	NORMAL METAL IN WOOD BOXES NORMAL DERBIES FOR ORO NORMAL INGOTS FOR ORO		JNMP5 JNMP5 JNMP6	116 0 0	0 0 0	115
4	Depleted Ingots (HH)	1,637	DEPLETED INGOTS (HH)		JNMP6	1,688	0	1,688 (279 HHWMB)
6	Depleted Derbies	4	DEPLETED DERBIES Depleted Derbies (RTS)		JNMP5 JNMP6	4 0	0 0	4 (1 TOC)
8	Depleted cores	1,477	DER. CORES FOR ORO DER. CORES FOR ORO (RTS)		JNMP5 JNMP6	1,477 0	0 0	1,477 (217 TOCs)
10	Depleted T-hoppers	64	DER. UF4 FOR ORO (T-HOPPERS)		JNMP3	64	0	64 (22 Sealands)
14	> 1% Derbies	710	> 1% DERBIES > 1% DERBIES (RTS)		JNMP5 JNMP6	710 0	0 0	710 (355 SBWSC)
			ARGONNAT/LAB (RTS)		JNMP6	1	0	1
			NFS (RTS)		JNMP6	12	0	12
			SANTAFE UF4 DRUMS		JNMP6	0	0	1 (TOC)
			DER. HALF HIGH (NEEDS REPACKAGED)		JNMP7	0	0	128 (HHWMB)



Nuclear Materials Disposition Project - Uranium Product Disposition  
Exhibit 2

#	CAN #	MATERIAL DESCRIPTION	QTY REMARKS OF 1200	QTY REMARKS OF 1200	UNITS	PACKAGING AREA	REPACKAGED QUANTITY	SUPPLYING QUANTITY (CONTAINERS)	CALCULATED PACKAGING DURATION (DAYS)	CALCULATED VACUATION (DAYS)	CALCULATED DISCOUNT DURATION (DAYS)	TOTAL DAYS	PKGS OFF-ENR QTY/ENR	URANIUM LBS ORIGINAL	URANIUM LBS REMARKS	GRAND TOTALS	# SHIPMENTS REMARKS	COMMENTS
1		NORMAL RODS + DERIVES	117	0	NO DERIVES	RIS	3	0	NA	NA	1	2	6	107,818	0	N/A	1	COMPLETE
2		NORMAL DRUMS OF METAL	341	12	DRUMS	BUILDING 60	3	0	NA	NA	1	2	6	277,600	1,478	N/A	1	FY-01
3		NORMAL COMPOUNDS	27	0	CONTNRS	BUILDING 71	1	0	NA	NA	1	2	6	15,331	0	N/A	1	COMPLETE
4		DEPLETED RODS (RH)	1477	0	RODS	BUILDING 60	0	0	NA	NA	1	2	6	143,318	0	N/A	1	COMPLETE
5		DEPLETED RODS (SCORUMS)	59	0	RODS	BUILDING 60	0	3	NA	NA	1	2	6	67,833	7,814	N/A	1	FY-01
6		DEPLETED DERIVES (RHDS)	4	0	DERIVES	BUILDING 60	0	0	NA	NA	1	2	6	1,144	0	N/A	1	COMPLETE
7		W/SO DEPLETED METAL	22	0	EA	BUILDING 60	3	0	NA	NA	1	2	6	33,358	463	N/A	1	FY-01
8		DEPLETED CORES	1,117	0	CORE BOXES	BUILDING 60	0	0	NA	NA	1	2	6	1,117,318	0	N/A	1	COMPLETE
9		DEPLETED U74	14,408	0	CANS	48 WHSE	0	0	NA	NA	1	2	6	2,160,314	0	N/A	1	COMPLETE
10		THOPPERS	64	0	THOPPERS	BUILDING 71	0	0	NA	NA	1	2	6	418,418	0	N/A	1	COMPLETE
11		W/SO COMPOUNDS	2,479	1,646	CONTNRS	BUILDING 60	1,646	1,646	NA	NA	1	2	6	145,144	46,772	N/A	1	FY-01/2 CREWS
12		W/SO COMPOUNDS	290	290	CONTNRS	BUILDING 60	3,690	3,690	NA	NA	1	2	6	209,543	209,543	1,199,610	59	FY-01/2 CREWS
13		W/SO RODS	21	0	RODS	BUILDING 60	0	0	NA	NA	1	2	6	4,774	0	N/A	1	COMPLETE
14		W/SO DERIVES	719	0	DERIVES	BUILDING 60	0	0	NA	NA	1	2	6	287,604	0	N/A	1	COMPLETE
15		W/SO ENRICHED METAL	595	595	CONTNRS	BUILDING 71	3,255	3,255	NA	NA	12	147	4	395,517	395,517	2,244,559	200	AVERAGE 6 PIECES/ROD, 2 PIECES PER DISCOUNT, 11 DISCOUNT
16		W/SO U74	1,453	1,453	CANS	BUILDING 60	1,453	1,453	NA	NA	1	2	6	85,537	85,537	85,537	190	FY-01/2 CREWS
17		W/SO U3H	819	0	CONTNRS	BUILDING 71	0	0	NA	NA	1	2	6	411,114	0	N/A	1	COMPLETE
18		W/SO COMPOUNDS W/SO	115	115	CONTNRS	BUILDING 60	115	20	NA	NA	1	2	6	33,027	33,027	N/A	1	FY-01

\*INCLUDED WITH #8

# Nuclear Materials Disposition Project - Material Requirements

Charge #	Activity ID	Exhibit #	Description	Type	Drums		TDCS/SGS		SBWSC		Pallets		Airtight		Dusage		PPE		Shipments		TOTAL
					QTY	Unit \$	Total \$	QTY	Unit \$	Total \$	QTY	Unit \$	Total \$	Unit \$	Total \$	Unit \$	Total \$	QTY	Unit \$	Total \$	
JUWPA	JUWPA0010		Fissile Excepted <1% Compounds Planning & Material Procurement PPE		404	\$ 26.827	\$ 10,838	136	\$ 13,600	\$ 1,849	136	\$ 14,494	136	\$ 14,494	136	\$ 14,494	136	\$ 14,494	136	\$ 14,494	\$ 982,603
	JUWPA0310		Rejected Normal Compounds Repackaging Shipping	85	3	\$ 66.65	\$ 200	1	\$ 2,000	\$ 2,000	1	\$ 294	1	\$ 294	1	\$ 100	1	\$ 4,600	1	\$ 4,600	\$ 2,494
	JUWPA0311		Rejected Misc. Depleted UF4 Repackaging Shipping	85	5	\$ 66.65	\$ 333	2	\$ 2,000	\$ 4,000	2	\$ 588	2	\$ 588	2	\$ 250	2	\$ 4,600	2	\$ 9,200	\$ 4,588
	JUWPA0312		Depleted Compounds/Flash Repackaging Shipping	85	11	\$ 66.65	\$ 733	4	\$ 2,000	\$ 8,000	4	\$ 1,178	4	\$ 1,178	4	\$ 400	4	\$ 4,600	4	\$ 18,400	\$ 9,909
	JUWPA04A0		<1% Enriched Compounds Repackaging Shipping	85	326	\$ 66.65	\$ 21,728	109	\$ 2,000	\$ 218,000	109	\$ 32,046	109	\$ 32,046	109	\$ 10,900	109	\$ 4,600	109	\$ 501,400	\$ 271,774
	JUWPA18R0		Rejected <1% U308 Repackaging Shipping	85	53	\$ 66.65	\$ 3,532	18	\$ 2,000	\$ 36,000	18	\$ 5,292	18	\$ 5,292	18	\$ 1,800	18	\$ 4,600	18	\$ 82,800	\$ 44,824
	JUWPA19R0		<1% Rejected Misc. Compounds Repackaging Shipping	85	4	\$ 66.65	\$ 267	1	\$ 2,000	\$ 2,000	1	\$ 294	1	\$ 294	1	\$ 100	1	\$ 4,600	1	\$ 4,600	\$ 2,581
	JUWPA24B0		>1% Enriched Compounds Fissile Excepted Repackaging Shipping	85	2	\$ 66.65	\$ 133	1	\$ 2,000	\$ 2,000	1	\$ 294	1	\$ 294	1	\$ 100	1	\$ 4,600	1	\$ 4,600	\$ 4,100
	JUWPA24B0		Fissile Excepted & Depleted Metals Planning & Material Procurement PPE		231	\$ 13,225	\$ 3,055	277	\$ 331,790	\$ 92,350	277	\$ 84,901	277	\$ 84,901	277	\$ 7,000	277	\$ 33,560	277	\$ 92,350	\$ 868,480
	JUWPA21A0		Depleted Metal Repackaging Shipping	85	134	\$ 66.65	\$ 8,931	223	\$ 12,700	\$ 2,832,100	223	\$ 306.5	223	\$ 68,350	223	\$ 5,600	223	\$ 4,600	223	\$ 283,200	\$ 360,491
JUWPB	JUWPA21B0		Depleted Ingot & Ductile Repackaging Shipping	Combo	101	\$ 87.35	\$ 8,822	17	\$ 12,700	\$ 21,590	17	\$ 306.5	17	\$ 5,211	17	\$ 500	17	\$ 4,600	17	\$ 23,900	\$ 35,623
	JUWPA21C0		Enriched Metals Fissile Excepted Repackaging Shipping	85	16	\$ 66.65	\$ 1,066	27	\$ 12,700	\$ 34,290	27	\$ 306.5	27	\$ 8,276	27	\$ 600	27	\$ 4,600	27	\$ 27,600	\$ 43,632
	JUWPA22R0		Rejected Normal Drums of Metal Repackaging Shipping	85	4	\$ 66.65	\$ 267	6	\$ 12,700	\$ 7,620	6	\$ 306.5	6	\$ 1,839	6	\$ 200	6	\$ 4,600	6	\$ 9,200	\$ 9,726
	JUWPA23R0		Rejected Misc. Depleted Metal Repackaging Shipping	85	2	\$ 66.65	\$ 133	4	\$ 12,700	\$ 5,080	4	\$ 306.5	4	\$ 1,208	4	\$ 100	4	\$ 4,600	4	\$ 4,600	\$ 6,439
	JUWPA20010		RCRA Material Planning & Material Procurement PPE		66	\$ 3,314	\$ 218,000	111	\$ 22,000	\$ 2,442	111	\$ 780	111	\$ 1,320	111	\$ 1,200	111	\$ 42,407	111	\$ 78,500	\$ 187,256
	JUWPA26A0		<1% RCRA Compounds Repackaging Shipping	85	26	\$ 66.65	\$ 1,733	9	\$ 2,000	\$ 18,000	9	\$ 120	9	\$ 1,080	9	\$ 900	9	\$ 4,600	9	\$ 41,400	\$ 20,813
	JUWPA26B0		>1% RCRA Compound Repackaging Shipping																		\$ 42,300
	JUWPA24R0		Sealed Sources Repackaging Shipping	55	20	\$ 53.21	\$ 1,064				6	\$ 86.65		\$ 520		\$ 600		\$ 4,600	6	\$ 27,600	\$ 28,720
	JUWPA23R0		T-Hoppers Repackaging Shipping	55	10	\$ 53.21	\$ 532	2	\$ 2,000	\$ 4,000	3	\$ 86.65		\$ 260		\$ 200		\$ 4,600	2	\$ 9,200	\$ 13,900
	JUWPA23R0																				

# Nuclear Materials Disposition Project - Material Requirements

Charge #	Activity ID	Description	Type	QTY	Unit	Total \$	TOC51S03	QTY	Total \$	8BVSC	QTY	Total \$	Pallets	Unit	Total \$	Absorbant	Unit	Total \$	Damage	Unit	Total \$	PPE	Unit	Total \$	Shipments	Unit	Total \$	TOTAL
JUVPD	JUWPD0010	Flammable Compounds Planning & Material Procurement PPE																										
	JUWPD0170	Rejected >1% UO3 Repackaging Shipping																										
	JUWPD0170	Rejected >1% UO3 Repackaging Shipping																										
	JUWPD0280	Rejected Misc. Compounds Repackaging Shipping																										
	JUWPD0160	Rejected >1% UF4 Repackaging Shipping																										
	JUWPD0260	>1% Enriched Compounds Repackaging Shipping																										
JUWPE	JUWPE0010	Flammable Metals Planning & Material Procurement																										
	JUWPE2300	>1% Enriched Metal Repackaging Vent Pigs	Combo	1220	87.35	\$ 106,667																						
	JUWPE2600	<1% Enriched Metal Repackaging Vent Pigs	Combo	2658	87.35	\$ 232,118																						
	JUWPE1500	Rejected Misc. Enriched Metal Repackaging Vent Pigs	Combo	70	87.35	\$ 6,115																						
TOTAL						\$ 670,493																						

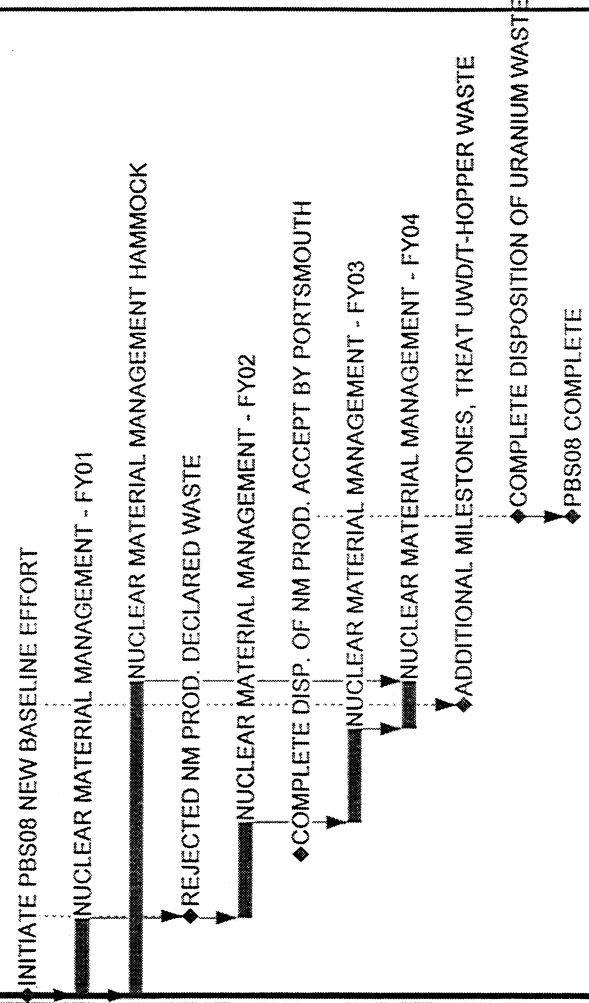


## **SECTION 1**

### **2.0 SCHEDULE**



Activity ID	Activity Description	Early Start	Early Finish	Orig Dur	FY01	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11
<b>J PBS 08 - NUCLEAR MATERIALS</b>															
<b>1.1.J.A MANAGEMENT</b>															
<b>JNMSA NUCLEAR MATERIAL MANAGEMENT</b>															
J9NMSMS00	INITIATE PBS08 NEW BASELINE EFFORT	01DEC00		0											
J9NMSA0001	NUCLEAR MATERIAL MANAGEMENT - FY01	01DEC00	27SEP01	186											
J9NMSAH01	NUCLEAR MATERIAL MANAGEMENT HAMMOCK	01DEC00	31MAR04	745*											
J9NMSMS02	REJECTED NM PROD. DECLARED WASTE		01OCT01*	0											
J9NMSA0002	NUCLEAR MATERIAL MANAGEMENT - FY02	01OCT01	30SEP02	224											
J9NMPMS01	COMPLETE DISP. OF NM PROD. ACCEPT BY PORTSMOUTH		01JUN02*	0											
J9NMSA0003	NUCLEAR MATERIAL MANAGEMENT - FY03	01OCT02	30SEP03	224											
J9NMSA0004	NUCLEAR MATERIAL MANAGEMENT - FY04	01OCT03	31MAR04	111											
J9NMSMS07	ADDITIONAL MILESTONES, TREAT UWD/T-HOPPER WASTE		31DEC03*	0											
J9NMSMS08	COMPLETE DISPOSITION OF URANIUM WASTE		31DEC05*	0											
J9NMSMS09	PBS08 COMPLETE		31DEC05	0											



**FLUOR FERNALD**  
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Start Date  
 Finish Date  
 Data Date  
 Run Date

01DEC00  
 31DEC05  
 01DEC00  
 07SEP01 11:04

01DEC00 | BLCF - J901

Sheet 1 of 1  
**NUCLEAR MATERIALS**  
**1.1.J.A MANAGEMENT**

Early Bar  
 Progress Bar  
 Critical Activity

Date  
 Revision  
 R1-F08-001  
 R1-F08-002  
 R1-F08-003

Checked/Approved





## **SECTION 1**

### **3.0 MANPOWER PLANS**



## Manpower Planning Sheet (CR2)

MPS #

1JA01

NUCLEAR MATERIAL MANAGEMENT

DRIVERS	START DATE	END DATE	TOT	FY 2001				FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				
				Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
801 Nuclear Materials Summary	10/02/2000	05/20/2002		xxx	xxx	xxx	xxx	xxx	xxx	xx																		
802 Setup of Fac. & Repkg of Uranium Metals	10/02/2000	07/18/2001		xxx	xxx	xxx	x																					
803 Setup of Fac. & Repkg of < 1% Uranium	10/02/2000	08/30/2001		xxx	xxx	xxx	xx																					
804 Facilities Setup for Repkg > 1 WT% U235	10/02/2000	12/27/2001		xxx	xxx	xxx	xxx	xxx																				
805 Shipment of Nuclear Materials	10/02/2000	01/10/2002		xxx	xxx	xxx	xxx	xxx	x																			
806 Nuc. Material Risk/PPE/SCA/PlanningWhse	10/02/2000	05/20/2002		xxx	xxx	xxx	xxx	xxx	xxx	xx																		
807 Small Scale Processing of Nuclear Material	10/02/2000	01/30/2001		xxx	x																							
808 UWD Depleted LLW & Depleted Ingots	10/02/2000	04/17/2002		xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	x										
809 Enriched Oxide/Metal & Residue	10/02/2000	01/06/2003		xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
810 UWD Planning	10/02/2000	09/30/2003		xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
811 PPE & SCA Support for UWD Activities	07/23/2001	10/16/2003		xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
812 UWD RCRA Materials	02/04/2002	01/20/2004		xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
813 Feas. Study Processing Uranium Waste	10/01/2002	06/18/2003																										
814 UWZ Design/Cons/Treat/Ship	10/02/2003	09/29/2005																										
NMD	Procurement	Buyer/Contracts Administrator		0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NMD	Administration	Clerks		26.00	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	0	0	0	0	0	0	0	0	0
NMD	Project Controls	Cost Analyst		14.00	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0
NMD	Engineering & Design	Engineer & Construction Tech.		0.90	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
NMD	Engineering & Design	Engineer		7.50	2	1	1	1	0.5	0.5	0.5	0.5	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NMD	Operations Labor	Engineer: Process & Startup		12.00	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
NMD	Administration	Executive Administrator		0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
NMD	Information Management	Information Records Rep.		0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
NMD	Procurement	Material Property Control Rep.		0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
NMD	Project Controls	Scheduler		12.00	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0
NMD	Operations	Operations Manager		12.00	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0
NMD	Project Management	Project Mgr.		0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
NMD	QA/QC	QA/QC Tech.		12.00	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0
NMD	Environmental Safety & H	Rad Engineer		11.20	0.6	0.6	0.6	0.6	1.6	1.6	1.6	1.6	0.6	0.6	0.6	0.6	0	0	0	0	0	0	0	0	0	0	0	
NMD	Administration	Technical Writer		0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
NMD	Project Management	Tech/Program Support Rep.		80.60	8.6	8	8	8	6	6	6	6	6	6	6	5	3	2	0	0	0	0	0	0	0	0	0	
NMD	Waste Management	Waste Engineer		86.00	9	9	9	9	6	6	6	6	6	6	5	4	3	2	0	0	0	0	0	0	0	0	0	
NMD	Waste Management	Waste Engineering Mgr.		22.00	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	0	0	0	0	0	0	0	0	
Sheet Totals:				256.20	29.30	27.70	27.70	27.70	23.20	23.20	23.20	23.20	21.20	20.60	18.60	15.60	8.00	7.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

## Manpower Planning Sheet (CR2)

**MPS # 1JA01 NUCLEAR MATERIAL MANAGEMENT**

[illegible]

## PROJECT SAFETY ANALYSIS SUPPORT

Safety Analysis	Project Management	Tech/Program Support Rep.
0.00	0	0
<b>Sheet Totals:</b>		
0.00	0.00	0.00

MPS #	1JA02	PROJECT SAFETY ANALYSIS SUPPORT

[illegible]

## **SECTION 1**

### **4.0 ESTIMATE**





**JNMSA**

**NUCLEAR MATERIAL MANAGEMENT**



# Fluor Fernald, Inc.

PBS: 08  
WBS: 1.1.J  
CTRL ACCT: JNMS  
CHARGE NO: JNMSA  
COMMENT#: R1-F08-002, R1-F08-003  
ESTIMATE SUPPORT WORKSHEET  
FOR ACTIVITY BASED ESTIMATING  
\*\*\*\* STATED IN FY01 DOLLARS \*\*\*\*  
(1 FTE EQUALS 1747 HOURS)

DATE: 06-Sep-01  
PROJECT MGR: Donald Paine  
CAM: Donald Paine  
PREPARED BY: Mary Stone  
FISCAL YEAR: 2001-2004

Resource: CLERKS CLERKS EOC: LABOR  
Res Dept: 946 Overtime: SAL Class:

	Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-
Yr Hours:	Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10
Cum Hours:	2,904.0	3,494.0	3,494.0	874.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	2,904.0	6,398.0	9,892.0	10,766.0	10,766.0	10,766.0	10,766.0	10,766.0	10,766.0	10,766.0
Cum Total Cost:	69,377	87,861	93,062	24,651	0	0	0	0	0	0
	69,377	157,237	250,299	274,950	274,950	274,950	274,950	274,950	274,950	274,950

Resource: CSTANL COST ANALYST EOC: LABOR  
Res Dept: 946 Overtime: SAL Class:

	Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-
Yr Hours:	Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10
Cum Hours:	1,452.0	1,747.0	1,747.0	874.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	1,452.0	3,199.0	4,946.0	5,820.0	5,820.0	5,820.0	5,820.0	5,820.0	5,820.0	5,820.0
Cum Total Cost:	56,483	71,532	75,766	40,140	0	0	0	0	0	0
	56,483	128,014	203,781	243,920	243,920	243,920	243,920	243,920	243,920	243,920

Resource: E&CTEC ENG & CONST TECH EOC: LABOR  
Res Dept: 946 Overtime: SAL Class:

	Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-
Yr Hours:	Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10
Cum Hours:	145.0	174.7	44.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	145.0	319.7	363.7	363.7	363.7	363.7	363.7	363.7	363.7	363.7
Cum Total Cost:	3,877	4,917	1,312	0	0	0	0	0	0	0
	3,877	8,794	10,106	10,106	10,106	10,106	10,106	10,106	10,106	10,106

Resource: ENGINEER ENGINEER EOC: LABOR  
Res Dept: 946 Overtime: SAL Class:

	Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-
Yr Hours:	Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10
Cum Hours:	1,452.0	873.5	218.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	1,452.0	2,325.5	2,543.5	2,543.5	2,543.5	2,543.5	2,543.5	2,543.5	2,543.5	2,543.5
Cum Total Cost:	99,840	63,220	16,712	0	0	0	0	0	0	0
	99,840	163,059	179,771	179,771	179,771	179,771	179,771	179,771	179,771	179,771

Resource: ENGPRC ENG PROCESS/STARTUP EOC: LABOR  
Res Dept: 946 Overtime: SAL Class:

	Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-
	Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10
Yr Hours:	1,452.0	1,747.0	1,747.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	1,452.0	3,199.0	4,946.0	4,946.0	4,946.0	4,946.0	4,946.0	4,946.0	4,946.0	4,946.0
Yr Total Cost:	81,283	102,939	109,033	0	0	0	0	0	0	0
Cum Total Cost:	81,283	184,222	293,255	293,255	293,255	293,255	293,255	293,255	293,255	293,255

Resource: MAT300  
Res Dept: 946  
MATERIAL OBJCLASS300  
Overtime: Class: EOC: MATERIAL  
MAT

	Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-
	Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10
Yr Units:	12,000.0	18,355.0	18,355.0	18,355.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Units:	12,000.0	30,355.0	48,710.0	67,065.0	67,065.0	67,065.0	67,065.0	67,065.0	67,065.0	67,065.0
Yr Total Cost:	12,000	18,851	19,360	19,902	0	0	0	0	0	0
Cum Total Cost:	12,000	30,851	50,210	70,112	70,112	70,112	70,112	70,112	70,112	70,112

Resource: ODC600  
Res Dept: 946  
ODC 600  
Overtime: FY01 Class: EOC: ODC  
ODC

	Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-
	Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10
Yr Units:	40,000.0	49,000.0	49,000.0	24,500.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Units:	40,000.0	89,000.0	138,000.0	162,500.0	162,500.0	162,500.0	162,500.0	162,500.0	162,500.0	162,500.0
Yr Total Cost:	40,000	50,323	51,682	26,564	0	0	0	0	0	0
Cum Total Cost:	40,000	90,323	142,005	168,569	168,569	168,569	168,569	168,569	168,569	168,569

Resource: ODC700  
Res Dept: 946  
ODC 700  
Overtime: FY01 Class: EOC: ODC  
ODC

	Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-
	Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10
Yr Units:	40,000.0	49,000.0	49,000.0	24,500.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Units:	40,000.0	89,000.0	138,000.0	162,500.0	162,500.0	162,500.0	162,500.0	162,500.0	162,500.0	162,500.0
Yr Total Cost:	40,000	50,323	51,682	26,564	0	0	0	0	0	0
Cum Total Cost:	40,000	90,323	142,005	168,569	168,569	168,569	168,569	168,569	168,569	168,569

Resource: OPRMGR  
Res Dept: 946  
OPERATIONS MGR  
Overtime: FY01 Class: EOC: LABOR  
SAL

	Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-
	Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10
Yr Hours:	1,452.0	1,747.0	1,747.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	1,452.0	3,199.0	4,946.0	4,946.0	4,946.0	4,946.0	4,946.0	4,946.0	4,946.0	4,946.0
Yr Total Cost:	75,911	96,135	101,827	0	0	0	0	0	0	0
Cum Total Cost:	75,911	172,046	273,873	273,873	273,873	273,873	273,873	273,873	273,873	273,873

Resource: PARSONS  
Res Dept: 946  
PARSONS  
Overtime: FY01 Class: EOC: SUBCONTRACTORS  
SUB

	Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-
	Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10
Yr Units:	135,000.0	162,000.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0





## **SECTION 1**

### **5.0 RISK PLAN**





# Risk/Opportunity Identification and Analysis Form

Project: Nuclear Material Disposition		PBS Number: 8		Total Baseline Dollars (Minimum Case):				\$8,919,244		
Evaluator: J. Samples		Date: May 1, 2001		WBS Number: 1.1.J.A.						
CAM: R. Schulten		Date: May 1, 2001		Control Account Number: JNMS						
Project Task	Risk and/or Opportunity	Potential Impact	Internal Or External Driver	Impact Cost \$ (Maximum Case)	Risk Impact Level	Risk Probability %	Risk Probability Level	Probable Cost \$ (Likeliest Case)	Risk Critical Value	Risk Handling Strategy
Reviews and assessments	Increased project scrutiny	Increased level on internal and external assessments (DNFSB, ISRC, ORR, DOE, regulators, etc)	Internal	\$250,000		2	20	2	\$50,000	2 Accept
Total:				\$250,000					\$50,000	



**Nuclear Materials  
Disposition**



**WBS DICTIONARY**  
**CONTROL ACCOUNT/CHARGE NUMBER**



U.S. DEPARTMENT OF ENERGY  
WORK BREAKDOWN STRUCTURE DICTIONARY  
PART II - ELEMENT DEFINITION

1. PROJECT TITLE  FEMP (DEFENSE)	2. DATE OF CONTRACT  12/01/2000
3. IDENTIFICATION NUMBER  DE-AC24-01OH20115	4. INDEX LINE NO.  68
5. WBS ELEMENT CODE  1.1.J.B	6. WBS ELEMENT TITLE  NUCLEAR MATERIALS DISPOSITION
7. APPROVED CP NO.  ORIGINAL SCOPE PER CP# FY01-0115-0008-00	8. DATE OF CHANGES  12/01/2000
9. SYSTEM DESIGN DESCRIPTION  CERCLA/ACA	10. BUDGET AND REPORTING NUMBER  EW05H3080
11. ELEMENT TASK DESCRIPTION  <div style="margin-top: 20px;"> <p><b><u>a. ELEMENTS OF COST:</u></b></p> <p>Labor Materials Subcontracts ODCs</p> </div> <div style="margin-top: 20px;"> <p><b><u>b. TECHNICAL CONTENT:</u></b></p> <p>This element will provide for the nuclear product field planning, product identification, field characterization, processing, packaging, and shipment of uranium compounds and metal to the Uranium Management Division (UMD) in Portsmouth, Ohio. The compound streams include miscellaneous depleted UF4, enriched &gt;1% U235 UF4, enriched &gt;1% U235 UO3 to be repackaged through the vacuum transfer system into &lt;350 gram U235 packages, enriched &gt;1% U235 UO3 already in 350 gram U235 packages, and miscellaneous &lt;1% U235 enriched compounds. The metal streams include normal metal, depleted metal, and miscellaneous enriched metal.</p> <p>The earned value method for this work package is percent complete.</p> </div> <div style="margin-top: 20px;"> <p><b><u>c. SCOPE OF WORK:</u></b></p> <p>Activities include:</p> <ul style="list-style-type: none"> <li>• Planning for direct work (task order walk downs and daily safety briefings)</li> <li>• Field characterization (visual inspections and) photographs</li> <li>• Process (hydrogen monitoring, decant, vent) containers.</li> <li>• Repackage compounds and metals streams for shipment to the Uranium Management Division in Portsmouth, Ohio.</li> <li>• Ship repackaged product.</li> </ul> </div>	

**WORK SCOPE DEFINITION**  
(Control Account)

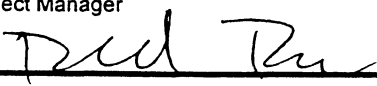

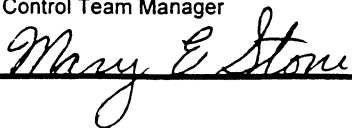
1. PROJECT TITLE  <b>FEMP (DEFENSE)</b>		2. DATE  <b>09/07/2001</b>	Page 1
3. WBS ELEMENT CODE  <b>1.1.J.B</b>	4. WBS ELEMENT TITLE/NAME  <b>NUCLEAR MATERIALS DISPOSITION</b>		
5. PERFORMING DIV/DEPARTMENT CODE  <b>46</b>	6. ORIGINATOR NAME/PHONE  <b>R. SCHULTEN/648-5730</b>	7. WBS ELEMENT MANAGER  <b>D. PAINE/648-5310</b>	
8. BUDGET AND REPORTING NUMBER  <b>EW05H3080</b>	9. BUDGET TITLE  <b>NUCLEAR MATERIALS</b>		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE?  <b>ORIGINAL SCOPE PER CP# FY01-0115-0008-00</b>		11. ESTIMATED START / COMPLETION DATE  <b>12/2000 - 05/2002</b>	
12. TASK IDENTIFICATION (CONTROL ACCOUNT)  <b>JNMP</b>	13. TASK DESCRIPTION (ONE LINE)  <b>NUCLEAR MATERIAL DISPOSITION</b>		
<div style="border-bottom: 1px solid black; padding-bottom: 10px;"><b><u>a. ELEMENTS OF COST:</u></b>  Labor Materials Subcontracts ODCs</div> <div style="border-bottom: 1px solid black; padding-bottom: 10px;"><b><u>b. TECHNICAL CONTENT:</u></b>  This element will provide for the nuclear product field planning, product identification, field characterization, processing, packaging, and shipment of uranium compounds and metal to the Uranium Management Division (UMD) in Portsmouth, Ohio. The compound streams include miscellaneous depleted UF<sub>4</sub>, enriched &gt;1% U<sub>235</sub> UF<sub>4</sub>, enriched &gt;1% U<sub>235</sub> UO<sub>3</sub> to be repackaged through the vacuum transfer system into &lt;350 gram U<sub>235</sub> packages, enriched &gt;1% U<sub>235</sub> UO<sub>3</sub> already in 350 gram U<sub>235</sub> packages, and miscellaneous &lt;1% U<sub>235</sub> enriched compounds. The metal streams include normal metal, depleted metal, and miscellaneous enriched metal.  The earned value method for this work package is percent complete.</div> <div><b><u>c. SCOPE OF WORK:</u></b>  Activities include:<ul style="list-style-type: none"><li>• Planning for direct work (task order walkdowns and daily safety briefings)</li><li>• Field characterization (visual inspections) and photographs</li><li>• Process (hydrogen monitoring, decant, vent) containers.</li><li>• Repackage compounds and metals streams for shipment to the Uranium Management Division in Portsmouth, Ohio.</li></ul></div>			
Project Manager  <i>Todd Paine</i>		Control Account Manager  <i>Todd Paine</i>	Control Team Manager  <i>Mary E Stone</i>



**WORK SCOPE DEFINITION**  
(Control Account)

1. PROJECT TITLE  <b>FEMP (DEFENSE)</b>		2. DATE  <b>09/07/2001</b>	Page 2
3. WBS ELEMENT CODE  <b>1.1.J.B</b>	4. WBS ELEMENT TITLE/NAME  <b>NUCLEAR MATERIALS DISPOSITION</b>		
5. PERFORMING DIV/DEPARTMENT CODE  <b>46</b>	6. ORIGINATOR NAME/PHONE  <b>R. SCHULTEN/648-5730</b>	7. WBS ELEMENT MANAGER  <b>D. PAINE/648-5310</b>	
8. BUDGET AND REPORTING NUMBER  <b>EW05H3080</b>	9. BUDGET TITLE  <b>NUCLEAR MATERIALS</b>		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE?  <b>ORIGINAL SCOPE PER CP# FY01-0115-0008-00</b>		11. ESTIMATED START / COMPLETION DATE  <b>12/2000 - 05/2002</b>	
12. TASK IDENTIFICATION (CONTROL ACCOUNT)  <b>JNMP</b>	13. TASK DESCRIPTION (ONE LINE)  <b>NUCLEAR MATERIAL DISPOSITION</b>		
14. ELEMENT TASK DESCRIPTION  • Ship repackaged product.  <b><u>d. WORK SPECIFICALLY EXCLUDED:</u></b>  • Operations Assurance manpower to perform Standard Startup Reviews (covered in PBS 12) • Warehousing of nuclear materials. (covered in WBS Element 1.2.C) • Planning, characterization, processing, packaging and shipment of uranium waste. (covered in JNMSA, JUWP) • Routine maintenance of equipment and facilities. (covered in PBS01) • Manpower to deliver Personal Protective Equipment (PPE) and manage the Satellite Clothing Area (SCA) support. (covered in PBS01) • Sampling and Analysis for customer specifications. • Shipping to an international location • UMD Oak Ridge and Portsmouth, Ohio cost. (DOE cost) • Shipment and storage of materials to an off-site commercial storage facility. • Disposition of nuclear materials generated by other remediation activities.			

**WORK SCOPE DEFINITION**  
(Work Package)

1. PROJECT TITLE  FEMP (DEFENSE)		2. DATE  09/07/2001	Page 1
3. WBS ELEMENT CODE  1.1.J.B	4. WBS ELEMENT TITLE/NAME  NUCLEAR MATERIALS DISPOSITION		
5. PERFORMING DIV/DEPARTMENT CODE  46	6. ORIGINATOR NAME/PHONE  R. SCHULTEN/648-5730	7. WBS ELEMENT MANAGER  D. PAINE/648-5310	
8. BUDGET AND REPORTING NUMBER  EW05H3080	9. BUDGET TITLE  NUCLEAR MATERIALS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE?  ORIGINAL SCOPE PER CP# FY01-0115-0008-00		11. ESTIMATED START / COMPLETION DATE  12/2000 - 05/2002	
12. TASK IDENTIFICATION (WORK PACKAGE)  JNMPC	13. TASK DESCRIPTION (ONE LINE)  NUCLEAR MATERIAL PRODUCT COMPOUNDS		
14. ELEMENT TASK DESCRIPTION  <div style="margin-top: 20px;"><b><u>a. ELEMENTS OF COST:</u></b>  Labor Materials Subcontracts ODCs</div> <div style="margin-top: 20px;"><b><u>b. TECHNICAL CONTENT:</u></b>  This work package provides for the repackaging and preparation of compounds for shipment to the UMD in Portsmouth, Ohio.  The product compounds consists of the following as of December 1, 2000:<ul style="list-style-type: none"><li>· 54 containers of miscellaneous depleted UF4</li><li>· 1,646 containers of &gt;1% U235 UO3 in &lt;350 U235 gram packages</li><li>· 1,455 containers of enriched UF4</li><li>· 166 containers of &lt;=1% U235 enriched miscellaneous compounds</li><li>· 240 containers of &gt;1% U235 UO3 requiring repackaging</li></ul></div> <div style="margin-top: 20px;">The earned value for this work package is percent complete.</div> <div style="margin-top: 20px;"><b><u>c. SCOPE OF WORK:</u></b>  Activities include:<ul style="list-style-type: none"><li>· Planning for direct work (task order walk downs and daily safety briefings)</li><li>· Field characterization (visual inspections) and photographs</li><li>· Assuring work can be and is performed in a safe manner.</li><li>· Identifying the specific containers associated with each product stream.</li></ul></div>			
Project Manager 		Control Account Manager 	Control Team Manager 

## WORK SCOPE DEFINITION (Work Package)

1. PROJECT TITLE  <b>FEMP (DEFENSE)</b>		2. DATE  <b>09/07/2001</b>	Page 2
3. WBS ELEMENT CODE  <b>1.1.J.B</b>	4. WBS ELEMENT TITLE/NAME  <b>NUCLEAR MATERIALS DISPOSITION</b>		
5. PERFORMING DIV/DEPARTMENT CODE  <b>46</b>	6. ORIGINATOR NAME/PHONE  <b>R. SCHULTEN/648-5730</b>	7. WBS ELEMENT MANAGER  <b>D. PAINE/648-5310</b>	
8. BUDGET AND REPORTING NUMBER  <b>EW05H3080</b>	9. BUDGET TITLE  <b>NUCLEAR MATERIALS</b>		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE?  <b>ORIGINAL SCOPE PER CP# FY01-0115-0008-00</b>		11. ESTIMATED START / COMPLETION DATE  <b>12/2000 - 05/2002</b>	
12. TASK IDENTIFICATION (WORK PACKAGE)  <b>JNMP</b>	13. TASK DESCRIPTION (ONE LINE)  <b>NUCLEAR MATERIAL PRODUCT COMPOUNDS</b>		

### 14. ELEMENT TASK DESCRIPTION

- Implementing task orders for pulling the material from inventory.
- Locating and removing the material from inventory.
- Venting and decanting material as necessary.
- Transporting the material to the packaging area.
- Inspecting, packaging and repackaging of all compounds classified as nuclear product for shipment to the UMD.
- Transport of repackaged material to a shipment preparation area.
- Labeling of material for shipment and preparing paperwork for shipment to Portsmouth, Ohio.
- Activities associated with the installation of the vacuum transfer station.
- Independent assessment and readiness review associated with the vacuum transfer repackaging process.
- Segregation of rejected material for declaration as uranium waste.
- Preparing facilities to perform packaging and storage operations.
- Final preparation and shipment of materials to the UMD. Includes FY01 Metal Shipments resulting from the one for one criteria for crosswalking charge numbers.
- Costs for personal protective equipment, materials and supplies, packaging materials, and packaging equipment.

### d. WORK SPECIFICALLY EXCLUDED:

- Operations Assurance manpower to perform Standard Startup Reviews (covered in PBS 12)
- Warehousing of nuclear materials. (covered in WBS Element 1.2.C)
- Planning, characterization, processing, packaging and shipment of uranium waste. (covered in JNMS, JUWP)
- Routine maintenance of equipment and facilities. (covered in PBS01)
- Manpower to deliver Personal Protective Equipment (PPE) and manage the Satellite Clothing Area (SCA) support. (covered in PBS01)
- Sampling and Analysis for customer specifications.
- Shipping to an international location
- UMD Oak Ridge and Portsmouth, Ohio cost. (DOE cost)
- Shipment and storage of materials to an off-site commercial storage facility.
- Disposition of nuclear materials generated by other remediation activities.

**WORK SCOPE DEFINITION**  
(Work Package)

1. PROJECT TITLE  FEMP (DEFENSE)		2. DATE  09/07/2001	Page 1
3. WBS ELEMENT CODE  1.1.1.J.B	4. WBS ELEMENT TITLE/NAME  NUCLEAR MATERIALS DISPOSITION		
5. PERFORMING DIV/DEPARTMENT CODE  46	6. ORIGINATOR NAME/PHONE  R. SCHULTEN/648-5730	7. WBS ELEMENT MANAGER  D. PAINE/648-5310	
8. BUDGET AND REPORTING NUMBER  EW05H3080	9. BUDGET TITLE  NUCLEAR MATERIALS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE?  ORIGINAL SCOPE PER CP# FY01-0115-0008-00		11. ESTIMATED START / COMPLETION DATE  12/2000 - 05/2002	
12. TASK IDENTIFICATION (WORK PACKAGE)  JNMPM	13. TASK DESCRIPTION (ONE LINE)  NUCLEAR MATERIAL PRODUCT METALS		
<div>14. ELEMENT TASK DESCRIPTION</div> <div style="margin-top: 20px;"><b><u>a. ELEMENTS OF COST:</u></b>  Labor Materials Subcontracts ODCs</div> <div style="margin-top: 20px;"><b><u>b. TECHNICAL CONTENT:</u></b>  This work package provides for the processing, repackaging and preparation of metals for shipment to the UMD in Portsmouth, Ohio.  The product metals consists of the following as of December 1, 2000:<ul style="list-style-type: none"><li>· 595 containers of miscellaneous enriched metal</li><li>· 26 containers of normal and depleted metal</li></ul>The earned value method for this work package is percent complete.</div> <div style="margin-top: 20px;"><b><u>c. SCOPE OF WORK:</u></b>  Activities include:<ul style="list-style-type: none"><li>· Planning for direct work (task order walk downs and daily safety briefings)</li><li>· Field characterization (visual inspections) and photographs</li><li>· Assuring work can be and is performed in a safe manner.</li><li>· Identifying the specific containers associated with each product stream.</li><li>· Implementing task orders for pulling the material from inventory.</li><li>· Locating and removing the material from inventory.</li><li>· Venting and decanting material as necessary.</li><li>· Transporting the material to the packaging area.</li></ul></div>			

**WORK SCOPE DEFINITION**  
(Work Package)

Page 2

1. PROJECT TITLE  FEMP (DEFENSE)		2. DATE  09/07/2001	
3. WBS ELEMENT CODE  1.1.J.B	4. WBS ELEMENT TITLE/NAME  NUCLEAR MATERIALS DISPOSITION		
5. PERFORMING DIV/DEPARTMENT CODE  46	6. ORIGINATOR NAME/PHONE  R. SCHULTEN/648-5730	7. WBS ELEMENT MANAGER  D. PAINE/648-5310	
8. BUDGET AND REPORTING NUMBER  EW05H3080	9. BUDGET TITLE  NUCLEAR MATERIALS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE?  ORIGINAL SCOPE PER CP# FY01-0115-0008-00		11. ESTIMATED START / COMPLETION DATE  12/2000 - 05/2002	
12. TASK IDENTIFICATION (WORK PACKAGE)  JNMPM	13. TASK DESCRIPTION (ONE LINE)  NUCLEAR MATERIAL PRODUCT METALS		

14. ELEMENT TASK DESCRIPTION  <ul style="list-style-type: none"><li>· Inspecting, packaging and repackaging of all metals classified as nuclear product for shipment to the UMD in Portsmouth, Ohio.</li><li>· Transport of repackaged material to a shipment preparation area.</li><li>· Labeling of material for shipment and preparing paperwork for shipment to Portsmouth.</li><li>· Segregation of rejected material for declaration as uranium waste.</li><li>· Preparing facilities to perform packaging and storage operations.</li><li>· Costs for personal protective equipment, materials and supplies, packaging materials, and packaging equipment.</li></ul>
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**d. WORK SPECIFICALLY EXCLUDED:**

- FY01 shipping will be charged to compounds resulting from the one for one criteria for crosswalking charge numbers (JNMPC).
- Operations Assurance manpower to perform Standard Startup Reviews (covered in PBS 12)
- Warehousing of nuclear materials. (covered in WBS Element 1.2.C)
- Planning, characterization, processing, packaging and shipment of uranium waste. (covered in JNMS, JUWP)
- Routine maintenance of equipment and facilities. (covered in PBS01)
- Manpower to deliver Personal Protective Equipment (PPE) and manage the Satellite Clothing Area (SCA) support. (covered in PBS01)
- Sampling and Analysis for customer specifications.
- Shipping to an international location
- UMD Oak Ridge and Portsmouth, Ohio cost. (DOE cost)
- Shipment and storage of materials to an off-site commercial storage facility.
- Disposition of nuclear materials generated by other remediation activities.



## **SECTION 2**

### **1.0 NARRATIVE**





2. PROJECT TITLE: NUCLEAR MATERIALS DISPOSITION	2. DATE: 09/10/01	3. PBS#: 08
4. WBS ELEMENT CODE: 1.1.J.B.	5. WBS ELEMENT TITLE: NUCLEAR MATERIALS DISPOSITION	
6. CAM NAME/ PHONE: DON PAINE/ROBERT SCHULTEN	7. CAM SIGNATURE:	
8. ORIGINAL/ CHANGE SCOPE/ PER CP#:	9.CONTROL ACCOUNT: JNMP	

## SECTION 2: JNMP – NUCLEAR MATERIALS DISPOSITION

### 1.0 NARRATIVE

#### 1.1 OVERVIEW

This control account will control remaining nuclear product planning, characterization, packaging/repackaging, and shipping to the Uranium Management Division (UMD) in Portsmouth, Ohio. There are two types of product, compounds and metal, controlled by two charge numbers.

The charge number for compounds is JNMPC. The compound streams are; miscellaneous depleted UF<sub>4</sub>, enriched > 1% U<sup>235</sup> UF<sub>4</sub>, enriched > 1% U<sup>235</sup> UO<sub>3</sub> to be repackaged through the vacuum transfer system into < 350 gram packages, enriched > 1% U<sup>235</sup> UO<sub>3</sub> already in 350 gram packages, and miscellaneous < = 1% enriched compounds.

The charge number for metals is JNMPM. The metal streams are; normal metal, depleted metal, and miscellaneous enriched metal. The materials will be prepared in accordance with site requirements, off-site location specifications, and applicable transportation guidelines.

#### 1.2 ASSUMPTIONS/EXCLUSIONS

##### 1.2.1 Assumptions

- 4) Project execution will be in Buildings 80, 56A, 71, 77, and 30A. Relocating to other sites will entail increased cost for setup. ~~A minimum of a six-month schedule delay would be realized and cost would depend on the final location.~~
- 2) Current Department of Transportation regulations and requirements for shipping packages and shipment processes do not materially change.
- ~~3) Over the road transportation routes currently in use remain in use.~~
- 4) Repackaging and shipping of metals that do not fall within the Certificates of Compliance approved payloads will not be more costly than packaging in Steel Banded Wooden Shipping Containers (SBWSC).

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- 5) Quality containers (drums, metal boxes, SBWSCs) will be available as needed.
- 6) Material will be inspected for acceptance by and transported to Portsmouth according to the UMD Shipping and Receiving Plan.
- 7) Inventory quantities based upon December 1, 2000 material inventory.
- 8) Any material found beyond current inventory, including remediation activities, will be budgeted for by the identifying organization.

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- 9) All material is assumed to be destined for Portsmouth. Any sale to the private sector will be the subject of a change order to assure all labor and material supporting the transaction, as well as any revenue, is captured separately.

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- 10) DOT will grant shipping exceptions for material that does not fall within the Certificate of Compliance. This is expected to be a small amount of enriched metal. Based on discussions with Shipping Services, pursuing exceptions would be preferable, both cost and schedule-wise, to pursuing certification of new containers.

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- 11) Product material is transferred to UMD/Portsmouth. Transportation to another facility is not included.

- 12) Fluor Fernald bears no financial responsibility for material at Portsmouth that may be declared waste.

#### 1.2.2 Exclusions

- 1) Operations Assurance manpower to perform Standard Startup Reviews (SSRs) is excluded. Covered by Operations Assurance.
- 2) Manpower to deliver Personal Protective Equipment (PPE) and manage the Satellite Change Areas is excluded. Covered by Infrastructure Services.
- 3) Building maintenance is excluded. Covered by Infrastructure Services.

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- 4) ~~The sale of material to the private sector is excluded. A change order will be processed upon completion of a sales agreement.~~

#### 1.2.3 Government-Furnished Equipment/Services

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- 1) ~~DOT will grant shipping exceptions for material that does not fall within the Certificate of Compliance.~~

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- 2) DOE provides approved Certificates of Compliance for packaging and shipment of the various metal payloads by January 31, 2001.
  - ~~3) Product material is transferred to UMD/Portsmouth. Transportation to another facility is not included.~~
  - 4) UMD remains open and accepts the material per the UMD Shipping and Receiving Plan.
  - ~~5) Fluor Fernald bears no financial responsibility for material at Portsmouth that may be declared waste.~~
  - ~~6) The FEMP bears no financial responsibility for material at Portsmouth beyond September 2002.~~
  - 7) The inventory of product material that has been or is expected to be rejected by UMD will not change significantly from Exhibit 1, Page 3.
  - 8) DOE Fernald receives authority to make waste declarations based upon the Screening Plan.
  - 9) DOE HQ approves DOE Fernald authority to make waste declaration of rejected product that does not meet the UMD criteria by October 1, 2001. This population includes materials that have been or are currently wet, that have impurities, or contain scrap material.
  - 10) DOE Fernald declares rejected materials waste by October 15, 2001. This will prevent impacting the June 1, 2002 commitment to remove nuclear material from the FEMP.

### 1.3 DRIVERS

- 1) DOE letter number DOE-0782-99 commitment to remove nuclear material from site by June 1, 2002.

### 1.4 PROJECT PHYSICAL DESCRIPTION

The materials managed under control account JNMP consist of 3,507 containers of compounds of various enrichments and 621 containers of metal, also of various enrichments. (See attached spreadsheet, Exhibit 1.) This material will require repackaging into DOT approved shipping containers for transport to the UMD/ Portsmouth for storage for eventual beneficial reuse.

Preparation for this repackaging will include locating and removing the material from inventory, venting and decanting (metal), and moving the materials to Building 80, 56A,

or 71. Decant water will be collected and transported to the Advanced Waste Water Treatment Plant for treatment. The repackaged materials will then be moved to Building 30A where they will be labeled and combined into distinct shipments for transport to Portsmouth.

Inspection, packaging, and repackaging will take place in Building 80, 56A, or 71. Repackaged material will be transferred to Building 30A for shipment preparation. Building 77 will be used for storage of new drums and interim storage of completed packages prior to labeling for shipment (overflow storage). These buildings will be required for Nuclear Material repackaging until June 1, 2002.

## 1.5 PROJECT PLAN/TECHNICAL SCOPE AND QUANTIFICATION PLAN

The product streams to be addressed under control account JNMP are grouped under two charge numbers, JNMPC for compounds, and JNMPM for metals. There are five distinct compound streams, and three metal streams. Specific activities associated with managing and shipping compounds and metals are described in detail in the following sections.

### 1.5.1 JNMPC - Compounds

#### 1) Task #1 - Planning

Planning for compounds disposition (3,507 containers) includes: assuring all work can be and is performed in the safest manner; identifying the specific containers associated with each product stream; preparing task orders for pulling the material from inventory, transporting it to the packaging area, packaging, and preparing the material for shipment; performing management assessments of work processes and equipment; preparing and performing or monitoring construction acceptance tests, start-up tests, and system operability tests.

## 2) Task #2 - Packaging

Packaging of compounds will be based in either Building 80 or Building 56A. Material will be pulled from inventory by Plant 1 Pad/Storage personnel per approved task order inventory request and transported to either Building 80 or Building 56A where NMD personnel will repackage it into shippable quantities and/or containers. The five compound streams for repackaging are: miscellaneous depleted UF<sub>4</sub>, 54 containers; > 1 % U<sup>235</sup> UO<sub>3</sub> in < 350 gram packages, 1,646 containers; enriched UF<sub>4</sub>, 1,455 containers; miscellaneous enriched < = 1 % U<sup>235</sup> compounds, 166 containers; and > 1 % U<sup>235</sup> UO<sub>3</sub> in > 350 gram packages, 240 containers. The 240 containers of > 1 % U<sup>235</sup> UO<sub>3</sub> will require repackaging to reduce quantities to a DOT approved shipping amount that equals 350 grams or less U<sup>235</sup>. This amounts to approximately 70 pounds of material given a 1.25 % U<sup>235</sup> enrichment. Containers in storage contain more than 70 pounds. To repackage this material safely and efficiently into shippable quantities, NMD has commissioned the design and construction of a vacuum transfer station. The first of three units arrived at the site on December 18, 2000 and is being installed in Building 56A. This is a self-contained unit that needs only electricity and compressed air supplied in order to perform its designed function. Building 56A was prepared for these units by having increased electrical capacity installed. An air compressor has been leased for the duration of the project and an air header, air dryers, and associated hardware installed in Building 56A. A management assessment and a Standard Start-up Review are expected prior to operation. These activities, including construction, will be conducted under charge number JNMPC.

### 2.1) Subtask #1 - Miscellaneous Depleted UF<sub>4</sub> Packaging

#### 2.1)1 Plan/Scope - Miscellaneous Depleted UF<sub>4</sub> Packaging

There are 54 containers of miscellaneous depleted UF<sub>4</sub>. The containers will be pulled from inventory on Plant 1 Pad, per approved task order inventory request, and transported to Building 80 by Plant 1 Pad/Storage personnel. At Building 80, NMD personnel will take the containers into a HEPA booth, open them and inspect the contents to determine if the material is dry, free-flowing, and free of foreign objects in accordance with the UMD Shipping and Receiving Plan. Material that passes inspection will be over-packed into TOC type boxes. The overpacking will result in four shippable containers. The boxes will be transferred to Building 30A, where they will be labeled for shipment and designated for transport to Portsmouth. Any containers that do not pass the initial inspection as dry, free-flowing, and free of foreign material will be closed and returned to Plant 1 Pad to await waste declaration. The project expects 50 percent of this material to be rejected. Reject quantities are captured on Exhibit 3. NMD plans to complete packaging and shipment of this stream by September 30, 2001.

2.1)2 Quantification - Miscellaneous Depleted UF<sub>4</sub> Packaging

Classification	Average FTE	Duration (Quarters)	Total Man-Hours
Hazwat	10.0	1	4,368
MVO	2.0	1	874
MC&A	0.5	1	218
QC	0.5	1	218
Rad Tech	1.0	1	437
Supervisor	1.0	1	437
Total Man-Hours:			6,552
ODC (@\$0.298/mh)			\$1,952

\*note: ODC rate is from Project Controls data less Laundry

2.2) Subtask #2 - > 1% U<sup>235</sup> UO<sub>3</sub> (in 350 gram packages) Packaging

2.2)1 Plan/Scope - > 1% U<sup>235</sup> UO<sub>3</sub> (in 350 gram packages) Packaging

The 1,646 containers (remaining of 2,479) of UO<sub>3</sub> in 350 gram packages will be repacked into new 55-gallon drums for shipment. This stream originated from the "C-13" Project, in which material was vacuum transferred into shippable packages. Subsequently, the packaged material was determined to be unsuitable for shipping, and now requires repackaging. The containers will be pulled from inventory on Plant 1 Pad, per approved task order inventory request, and transported to Building 80 by Plant 1 Pad/Storage personnel. At Building 80, NMD personnel will remove the 30-gallon drums from the current 55's and place them in new 55-gallon drums. Vermiculite will be placed in the interstitial space. The drums will be closed per the drum manufacturer's closure instructions concerning gap and torque. This effort will result in 1,646 shippable containers. The repackaged drums will be transferred to Building 30A where they will be labeled and banded onto pallets for shipment to Portsmouth. This stream is in progress and NMD plans to complete packaging and shipment by April 15, 2001. The project does not expect any of this material to be rejected.

2.2)2 Quantification - > 1 % U<sup>235</sup> UO<sub>3</sub> (in 350 gram packages) Packaging

Classification	Average FTE	Duration (Quarters)	Total Man-Hours
Hazwat	7.0	2	6,115
MVO	1.5	2	1,310
MC&A	0.5	2	437
QC	0.5	2	437
Rad Tech	1.5	2	1,310
Supervisor	1.0	2	874
<b>Total Man-Hours:</b>			<b>10,483</b>
<b>ODC (@\$0.298/mh)</b>			<b>\$3,124</b>

2.3) Subtask #3 - Enriched UF<sub>4</sub> Packaging

2.3)1 Plan/Scope - Enriched UF<sub>4</sub> Packaging

There are 1,455 containers of enriched UF<sub>4</sub>. This inventory is divided into four parts: <350 gram U<sup>235</sup> cans (10 gallon) in half-high boxes; <350 gram U<sup>235</sup> cans loose; 350 to 800-gram U<sup>235</sup> cans in half-high boxes; and loose 350 to 800 gram U<sup>235</sup> cans. Each specific inventory will be pulled from inventory on Plant 1 Pad, per approved task order inventory request, and transported to Building 80 by Plant 1 Pad/Storage personnel. At Building 80, NMD personnel will inspect and repackage the material.

The <350 gram U<sup>235</sup> cans in half-highs will be placed in the HEPA booth, the box opened and the cans of UF<sub>4</sub> removed. The cans will then be opened and inspected to determine that the material is dry, free-flowing and free of foreign objects in accordance with the UMD Shipping and Receiving Plan. Cans that pass inspection will be closed and packaged into 30-gallon drums. Vermiculite will be placed in the interstitial space. Burn-out plugs will be installed on the 30-gallon drums and they will be placed into 55-gallon drums. Vermiculite will be placed in the interstitial space. The drums will be closed per the drum manufacturer's closure instructions concerning gap and torque. The repackaged drums will be transferred to Building 30A.

The <350 gram U<sup>235</sup> loose cans will be placed in the HEPA booth, the cans will be opened and inspected to determine that the material is dry, free-flowing, and free of foreign objects in accordance with the UMD Shipping and Receiving Plan. Cans that pass inspection will be closed and packaged into 30-gallon drums. Vermiculite will be placed in the interstitial space. Burn-out plugs will be installed on the 30-gallon drums and they will be placed into 55-gallon drums. Vermiculite will be placed in the interstitial space. The drums will be closed per the drum manufacturers closure instructions concerning gap and torque. The repackaged drums will be transferred to Building 30A.

The 350 to 800-gram U<sup>235</sup> cans in half-highs will be placed in the HEPA booth, the box opened and the cans of UF<sub>4</sub> removed. The cans will then be opened and inspected to

determine that the material is dry, free-flowing, and free of foreign objects in accordance with the UMD Shipping and Receiving Plan. Cans that pass inspection will be closed and packaged into 55-gallon drums. Vermiculite will be placed in the interstitial space. The drums will be closed per the drum manufacturer's closure instructions concerning gap and torque. The repackaged drums will be transferred to Building 30A.

The 350 to 800-gram U<sup>235</sup> loose cans will be placed in the HEPA booth, the cans will be opened and inspected to determine that the material is dry, free-flowing, and free of foreign objects in accordance with the UMD Shipping and Receiving Plan. Cans that pass inspection will be closed and packaged into 55-gallon drums. Vermiculite will be placed in the interstitial space. The drums will be closed per the drum manufacturer's closure instructions concerning gap and torque. The repackaged drums will be transferred to Building 30A.

Containers that do not pass the initial inspection for dry and free-flowing material will be closed and returned to Plant 1 Pad to await waste declaration. Reject material that does not require processing will be packaged for shipment. The project expects ten percent of this material to be rejected. Reject quantities are captured on Exhibit 3.

This project will result in 1,455 shippable containers (less the reject amount). At Building 30A, the repackaged drums will be labeled for shipment to Portsmouth. NMD plans to complete packaging and shipment of the UF<sub>4</sub> stream by September 30, 2001.

#### 2.3)2 Quantification - Enriched UF<sub>4</sub> Packaging

Classification	Average FTE	Duration (Quarters)	Total Man-Hours
Hazwat	10.0	2	8,735
MVO	2.0	2	1,747
MC&A	0.5	2	437
QC	0.5	2	437
Rad Tech	1.0	2	874
Supervisor	1.0	2	874
<b>Total Man-Hours:</b>			<b>13,104</b>
<b>ODC (@\$0.298/mh)</b>			<b>\$3,905</b>

#### 2.4) Subtask #4 - Miscellaneous Enriched $\leq 1\%$ U<sup>235</sup> Compounds Packaging

##### 2.4)1 Plan/Scope - Miscellaneous Enriched $\leq 1\%$ U<sup>235</sup> Compounds Packaging

There are 166 containers of miscellaneous enriched  $\leq 1\%$  U<sup>235</sup> compounds. These containers will be pulled from inventory on Plant 1 Pad, per approved task order inventory request, and transported to Building 80 by Plant 1 Pad/Storage personnel. At Building 80, NMD personnel will take the containers into a HEPA booth, open the containers and inspect the contents to determine if the material is dry, free-flowing, and free of foreign



objects in accordance with the UMD Shipping and Receiving Plan. Material that passes inspection will be overpacked into TOC type metal boxes and transferred to Building 30A. Shipping labels will be placed on the boxes, which will be grouped into shipments to Portsmouth. This project will result in 33 shippable containers. Containers that do not pass the initial inspection for dry, free flowing material will be packaged for shipment as waste and returned to Plant 1 Pad to await waste declaration. The project expects 25 percent of the material will be rejected. Reject quantities are captured on Exhibit 3. NMD plans to complete shipment of this stream by September 30, 2001.

2.4)2 Quantification - Miscellaneous Enriched  $\leq 1\%$   $U^{235}$  Compounds Packaging

Classification	Average FTE	Duration (Quarters)	Total Man-Hours
Hazwat	7.0	1.0	3,057
MVO	1.0	1.0	437
MC&A	0.5	1.0	218
QC	0.5	1.0	218
Rad Tech	1.5	1.0	655
Supervisor	1.0	1.0	437
Total Man-Hours:			5,022
ODC (@\$0.298/mh)			\$1,496

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2.5) Subtask #5 -  $> 1\%$   $U^{235}$   $UO_3$  (to be repackaged) Packaging

2.5)1 Plan/Scope -  $> 1\%$   $U^{235}$   $UO_3$  (to be repackaged) Packaging

There are 240 containers of  $> 1\%$   $U^{235}$   $UO_3$  that are not packaged for shipment. Repackaging is required to reduce quantities to a DOT approved shipping amount that equals 350 grams or less  $U^{235}$ . This amounts to approximately 70 pounds of material given a 1.25% enrichment. Containers in storage contain more than 70 pounds. To repackage these containers safely and efficiently into shippable quantities, NMD has commissioned the design and construction of a vacuum transfer station. The first of three units arrives at the site on December 18, 2000 and is being installed in Building 56A. This is a self-contained unit that needs only electricity and compressed air supplied in order to perform its designed function. Building 56A was prepared for these units by having increased electrical capacity installed. An air compressor has been leased for the duration of the project and an air header, air dryers, and associated hardware installed in Building 56A. The project will perform start-up testing, a formal Systems Operability Test, and extensive hands-on training and familiarization with the equipment using surrogate material prior to beginning operations. A management assessment and Standard Start-Up Review will be performed prior to operation. This is projected to take sixteen to twenty weeks to fully ready the process for operation and receive formal clearance to begin.

These containers will be pulled from inventory on Plant 1 Pad, per approved task order inventory request, and transported to Building 56A by Plant 1 Pad/Storage personnel.

Transport and handling personnel must be Fissile Material Handlers (FMHs) and only one safe mass grouping at a time will be transported to and received at Building 56A. At Building 56A, NMD personnel will open each drum in a HEPA enclosure and inspect the material to ensure it is dry, free-flowing, and free of foreign objects in accordance with the UMD Shipping and Receiving Plan. The lid will be replaced on the drum, and it will be moved to the vacuum transfer facility and placed in the booth. An empty 30-gallon drum will be placed into the outlet booth and operators will transfer material equal to < 350 gram  $U^{235}$  amount into the destination drum. When the appropriate amount has been transferred, the drum will be wiped down and removed and another empty drum will be placed in the unit. This will continue until all the material in the source drum is transferred into packages with 350 grams or less  $U^{235}$ . NMD expects 16 repackaged drums for each source drum of this material. The 30-gallon drum will be packaged into a 55-gallon drum. Vermiculite will be placed in the interstitial space. The drums will be closed per the drum manufacturer's closure instructions concerning gap and torque. The empty source drum will be removed for crushing. 240 empty drums will require crushing. The new drums will be transferred to Building 30A. At Building 30A the drums will be labeled for shipment and grouped for transport to Portsmouth. The project will result in 3,680 shippable containers. Containers that do not pass the initial inspection will be closed and returned to Plant 1 Pad to await waste declaration. The project expects a 10% reject rate. Reject quantities are captured on Exhibit 3. NMD plans to complete packaging and shipment of this stream by May 30, 2002.

2.5)2 Quantification - > 1%  $U^{235}$   $UO_3$  (to be repackaged) Packaging

Classification	Average FTE	Duration (Quarters)	Total Man-Hours
Hazwat	14.0	4	24,458
MVO	3.0	4	5,241
MC&A	1.0	4	1,747
QC	1.0	4	1,747
Rad Tech	2.0	4	3,494
Supervisor	1.0	4	1,747
Total Man-Hours:			38,434
ODC (@\$0.298/mh)			\$11,453

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All or major portions of three product streams have been rejected by the UMD based upon preliminary data and process knowledge. These include 530 containers of  $\leq 1\%$   $U^{235}$   $U_3O_8$ , 664 containers of  $> 1\%$   $U^{235}$   $U_3O_8$ , and 180 containers of  $> 1\%$   $U^{235}$  miscellaneous compounds. After receiving the formal waste declaration from DOE, these streams will be handled as waste in the Uranium Waste Disposition Project. Rejected materials are being planned under the uranium waste project and are detailed on Exhibit 3. Investigations continue into alternate disposal methods for this material.

The following Plant 1 Pad/Storage crew supports the delivery of containers to the above subtasks.

Classification	Average FTE	Duration (Quarters)	Total Man-Hours
Hazwat	2.0	4	3,494
MVO	2.0	4	3,494
MC&A	0.5	4	874
IH	0.5	4	874
Rad Tech	1.0	4	1,747
Supervisor	0.5	4	874
<b>Total Man-Hours:</b>			<b>11,357</b>
<b>ODC (@\$0.298/mh)</b>			<b>\$3,384</b>

## 2.6) Subtask #6 - Shipping Compounds

### 2.6)1 Plan/Scope - Shipping Compounds

Shipping will be based in Building 30A. Repackaged material will be transferred there from the various repackaging areas in Building 80 and Building 56A. In Building 30A, inventory and shipping labels will be placed on the packages. Shipments will be assembled for Portsmouth and the proper documentation will be completed. Drums will be banded to pallets and the pallets loaded onto trailers and secured by Transportation laborers. Box shipments will be loaded onto trailers and secured by Transportation laborers. Shipping and Packaging Services will be responsible for acquiring transport and overseeing DOT compliance items.

#### Shipment Quantities - Compounds

Product Stream	Shippable Containers	Shipments
Miscellaneous Depleted UF <sub>4</sub>	4	1
> 1% U <sup>235</sup> UO <sub>3</sub> (in 350 gram packages)	1,646	123
Enriched UF <sub>4</sub>	1,455	180
Miscellaneous Enriched < = 1% U <sup>235</sup> Compounds	33	7
> 1% U <sup>235</sup> UO <sub>3</sub> (to be repackaged)	3,680	88

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## 2.6)2 Quantification - Shipping Compounds

Classification	Average FTE	Duration (Quarters)	Total Man-Hours
Hazwat	2.0	6	5,241
MVO	2.0	6	5,241
Trans Laborer	1.0	6	2,621
Prof Whse Attend	0.5	6	1,310
MC&A	0.3	6	786
QC	1.0	6	2,621
Rad Tech	1.0	6	2,621
Supervisor	1.0	6	2,621
<b>Total Man-Hours:</b>			<b>23,062</b>
<b>ODC (@\$0.298/mh)</b>			<b>\$6,872</b>

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## 1.5.2 JNMPPM - Metal

### 1) Task #1 - Planning

Planning for metals disposition (621 containers) includes: assuring all work can be and is performed in the safest manner; identifying the specific containers associated with each product stream; preparing task orders for pulling the material from inventory, transporting it to the packaging area, packaging, and preparing the material for shipment; performing management assessments of work processes and equipment; preparing and performing or monitoring construction acceptance tests, start-up tests, and system operability tests.

### 2) Task #2 - Processing

#### 2.1) Subtask #1 - Processing Metal

##### 2.1)1 Plan/Scope - Processing Metal

Processing required for the metal streams includes venting and decanting. Due to concerns over potential generation of hydrogen gas and pyrophoricity of uranium metal, guidelines and procedures have been implemented to assure that all containers of uranium metal are monitored for less than 10% Lower Explosive Limit (LEL) of hydrogen, then are vented and, if water is present, decanted. This is performed by Plant 1 Pad/Storage personnel prior to the material being moved to Buildings 80, 56A, or 71 for packaging.

## 2.1)2 Quantification - Processing Metal

Classification	Average FTE	Duration (Quarters)	Total Man-Hours
Hazwat	1.5	1	655
MVO	0.5	1	218
IH	0.5	1	218
Rad Tech	0.5	1	218
Supervisor	0.5	1	218
<b>Total Man-Hours:</b>			<b>1,527</b>
<b>ODC (@\$0.298/mh)</b>			<b>\$455</b>

## 3) Task #3 - Packaging

Packaging metal will consist of removing metal from storage drums and placing it into shippable quantities and containers. This work will be performed in Building 80 and 71. There are twelve containers of normal metal, six of miscellaneous depleted metal, and eight of depleted ingots remaining. Due to the small amount, these will be handled together. There are 595 containers of miscellaneous enriched metal of various sizes, shapes, and enrichments. The project is baselined to ship all the material to Portsmouth.

### 3.1) Subtask #1 - Normal and Depleted Metal Packaging

#### 3.1)1 Plan/Scope - Normal and Depleted Metal Packaging

There are twelve containers of normal metal, six of miscellaneous depleted metal, and eight of depleted ingots remaining. Due to the small amount, these will all be handled together. All of these drums require decanting, as the presence of water is the reason they were not packaged and shipped with like material previously completed. Plant 1 Pad/Storage personnel will collect and decant the containers, per approved task order inventory request, and transfer them to Building 80. NMD personnel will remove the metal pieces from the drums and package them into wooden boxes. The boxes will then be banded together and placed into TOC type boxes, which will be transferred to Building 30A for labeling and preparation for shipping. This effort will result in seven shipping containers for transport to Portsmouth. NMD plans to complete packaging and shipment of this stream by September 30, 2001.

### 3.1)2 Quantification - Normal and Depleted Metal Packaging

Classification	Average FTE	Duration (Quarters)	Total Man-Hours
Hazwat	9.0	1	3,931
MVO	4.0	1	1,747
MC&A	1.0	1	437
QC	1.0	1	437
Rad Tech	2.0	1	873
Supervisor	1.0	1	437
Total Man-Hours:			7,862
ODC (@\$0.298/mh)			\$2,343

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### 3.2) Subtask #2 - Miscellaneous Enriched Metal Packaging

#### 3.2)1 Plan/Scope - Miscellaneous Enriched Metal Packaging

There are 595 containers of miscellaneous enriched metal. This stream presents the greatest challenge facing the project, because this material is of many different sizes, shapes, and enrichments. Size and shape are major determinants of the type of shipping container in which the metal can be shipped. The great variety in size and shape is due to the sudden shutdown of the Fernald plant, which left unfinished materials in various stages of processing. Certified payloads never existed for some of these types of material, since it was never to be shipped in these forms. A group of wooden boxes, approved as Type A Fissile packages under Certificate of Compliance USA/5467/AF-85(DOE) and supported by Safety Analysis Report for Packaging HNF-SD-TP-SARP-019, are a critical component in the packaging of enriched metal. These boxes were developed early in the history of the FEMP, and their use contributed greatly to the site's outstanding record of transportation safety and compliance. However, the certification of these containers was allowed to lapse in December 1988. Diligent research confirmed that there were no other feasible packaging for this material, and recertification began in November 1994. The recertification of these packages, by DOE-HQ in Washington, D.C., is due by January 31, 2001. Delay in receiving the recertification by the January 31, 2001 deadline will impact the project's ability to complete disposition of this material by the commitment date of June 1, 2002.

Wooden boxes will be used for the metal that fits the approved payloads, unless alternate packaging is more cost effective. Other metal will be packaged in appropriately sized cans/drums and over-packed inside 55-gallon drums limited to one piece per drum. Where the enrichment is  $> 1\%$   $U^{235}$ , the metal will be shipped in a fissile package. The project is continuing to search for packaging to ship a small amount of material that is not approved for current packages. The project expects to receive DOT shipping exceptions in order to transport this small amount of material.

Prior to initiation of repackaging operations, all the containers of miscellaneous enriched metal will be opened and visually inspected by Plant 1 Pad/Storage personnel. The metal will be measured to assist in making a determination of what type of container it may be packaged in for shipping. This data will also assist in determining how many of each container to procure.

Plant 1 Pad/Storage personnel will pull the miscellaneous enriched metal from inventory, per approved task order inventory request. The containers of metal will be inspected for potential flammable or explosive gases (less than 10% of the Lower Explosive Limit for hydrogen), vented, and decanted as needed per existing Plant 1 Pad/Storage procedures. The project predicts 25% of the containers will need decanting. After completion of these steps, Plant 1 Pad/Storage personnel will transport the containers to Building 71. In Building 71, NMD personnel will remove the pieces of metal from the containers and inspect them to assure they conform to UMD acceptance criteria. Material that passes inspection will be repackaged into the approved wooden boxes (SARP boxes), fissile exception packages, or a DOT approved (exception) package. This decision will be based upon the physical size, shape, and weight of the metal and will be defined in the task order. Material that does not pass the inspection will be returned to Plant 1 Pad for storage and eventual disposal as waste by the UWD Project. A waste declaration will be requested. The project expects to generate 3,255 shipping containers for transport to Portsmouth. The containers will be transferred to Building 30A for labeling and preparation for shipment.

### 3.2)2 Quantification - Miscellaneous Enriched Metal Packaging

Classification	Average FTE	Duration (Quarters)	Total Man-Hours
Hazwat	7.0	6	18,344
MVO	2.8	6	7,337
MC&A	0.7	6	1,834
QC	0.7	6	1,834
Rad Tech	1.7	6	4,455
Supervisor	0.7	6	1,834
Total Man-Hours:			36,638
ODC (@\$0.298/mh)			\$10,620

Seventy-nine Metric Tons of Uranium (MTU) (approximately 220 containers) of this material is slated for sale to a private sector customer. The Consent Package/Approval for Sale must be approved by DOE-FN by April 1, 2001 in order to support packaging and shipping the material by the customer's April, 2002 deadline. When the sales contract is finalized, a Change Proposal will be prepared to create new charge accounts for the costs associated with packaging and shipping the material to the customer, and for the revenue received.

This fulfills a commitment to DOE-FN and the Inspector General for closer control of sale material. Care must be taken to assure there is no mixing of the material so the correct material reaches the customer. This material will be baselined for shipment to Portsmouth by the commitment date of June 1, 2002.

The following Plant 1 Pad/Storage crew supports the delivery of containers to the above subtasks.

Classification	Average FTE	Duration (Quarters)	Total Man-Hours
Hazwat	2.0	3	2,621
MVO	2.0	3	2,621
MC&A	0.5	3	655
IH	0.5	3	655
Rad Tech	1.0	3	1,310
Supervisor	0.5	3	655
<b>Total Man-Hours:</b>			<b>8,517</b>
<b>ODC (@\$0.298/mh)</b>			<b>\$2,538</b>

### 3.3) Subtask #3 - Shipping Metal

#### 3.3)1 Plan/Scope - Shipping Metal

Metal shipping will be based in Building 30A. In Building 30A, inventory and shipping labels will be placed on the packages. Shipments will be assembled and the proper documentation will be completed. Drums will be banded to pallets and the pallets loaded onto trailers and secured by Transportation laborers. Box shipments will be loaded onto trailers and secured by Transportation laborers. Shipping Services will be responsible for acquiring transport and overseeing DOT compliance items.

#### Shipment Quantities - Metal

Product Stream	Shippable Containers	Shipments
Normal and Depleted Metal	7	2
Miscellaneous Enriched Metal	3,255	200

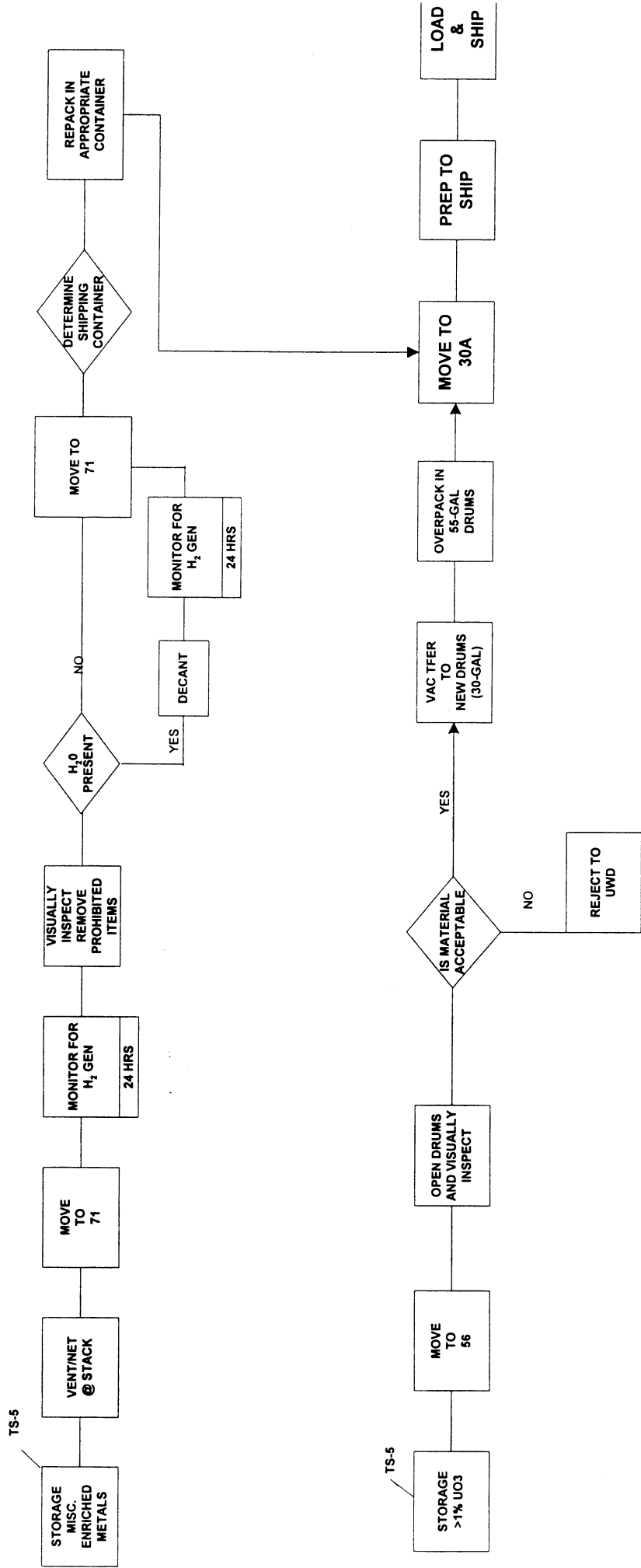


3.3)2 Quantification - Shipping Metal

Classification	Average FTE	Duration Quarters)	Total Man-Hours
Hazwat	2.0	6	5,241
MVO	2.0	6	5,241
Trans Laborer	1.0	6	2,621
Prof Whse Attend	0.5	6	1,311
MC&A	0.2	6	524
QC	1.0	6	2,620
Rad Tech	1.0	6	2,620
Supervisor	1.0	6	2,620
Total Man-Hours:			22,798
ODC (@\$0.298/mh)			\$6,794

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# MATERIAL FLOW CHART FOR NMD



## **SECTION 2**

### **2.0 SCHEDULE**







## **SECTION 2**

### **3.0 MANPOWER PLANS**







MPS #	1JB01	NUCLEAR MATERIAL PRODUCT COMPOUNDS

DRIVERS	START DATE	END DATE	FY 2007				FY 2008				FY 2009				FY 2010				FY 2011			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
801 Nuclear Materials Summary	10/02/2000	05/20/2002																				
802 Setup of Fac. & Repkg of Uranium Metals	10/02/2000	07/18/2001																				
803 Setup of Fac. & Repkg of < 1% Uranium	10/02/2000	08/30/2001																				
804 Facilities Setup for Repkg > 1 WT% U235	10/02/2000	12/27/2001																				
805 Shipment of Nuclear Materials	10/02/2000	01/10/2002																				
806 Nuc. Material Risk/PPE/SCA/Planning/WHs	10/02/2000	05/20/2002																				
807 Small Scale Processing of Nuclear Material	10/02/2000	01/30/2001																				
808 UWD Depleted LLW & Depleted Ingots	10/02/2000	04/17/2002																				
809 Enriched Oxide/Metal & Residue	10/02/2000	01/06/2003																				
810 UWD Planning	10/02/2000	09/30/2003																				
811 PPE & SCA Support for UWD Activities	07/23/2001	10/16/2003																				
812 UWD RCRA Materials	02/04/2002	01/20/2004																				
813 Feas. Study Processing Uranium Waste	10/01/2002	06/18/2003																				
814 UWZ Design/Const/Treat/Ship	10/02/2003	09/29/2005																				
General Labor	Hazwat		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Transportation Labor	Motor Vehicle Operator		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Procurement	Material Property Control Rep.		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
QA/QC	QA/QC Tech.		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Environmental Safety & Health	Rad Tech		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Operations	Operations Manager		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
General Labor	Hazwat		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Transportation Labor	Motor Vehicle Operator		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Procurement	Material Property Control Rep.		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
QA/QC	QA/QC Tech.		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Environmental Safety & Health	Rad Tech		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Operations	Operations Manager		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
General Labor	Hazwat		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Transportation Labor	Motor Vehicle Operator		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
QA/QC	QA/QC Tech.		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Environmental Safety & Health	Rad Tech		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Operations	Operations Manager		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
General Labor	Hazwat		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Transportation Labor	Motor Vehicle Operator		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
QA/QC	QA/QC Tech.		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Environmental Safety & Health	Rad Tech		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Operations	Operations Manager		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Transportation Labor	Motor Vehicle Operator		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Transportation Labor	Transportation Laborer		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	



MPS #	1JB01	NUCLEAR MATERIAL PRODUCT COMPOUNDS

[illegible]



## Manpower Planning Sheet (CR2)

**MPS # 1JB02 NUCLEAR MATERIAL PRODUCT METALS**

[illegible]

## **SECTION 2**

### **4.0 ESTIMATE**





**JNMPC**

**NUCLEAR MATERIAL PRODUCT COMPOUNDS**



DATE: 06-Sep-01  
PROJECT MGR: Donald P  
CAM: Donald P  
PREPARED BY: Mary Ston  
FISCAL YEAR: 2001-2002

ESTIMATE SUPPORT WORKSHEET  
FOR ACTIVITY BASED ESTIMATING  
\*\*\*\* STATED IN FY01 DOLLARS \*\*\*\*  
(1 FTE EQUALS 1747 HOURS)

[illegible][illegible]

Resource:	MVOOPR	MOTOR VEHICLE OPER	EOC:	LABOR
Res Dept:	946	Overtime:	HOU	

Yr Hours: Oct 00- Sep 01 Oct 01- Sep 02 Oct 02- Sep 03 Oct 03- Sep 04 Oct 04- Sep 05 Oct 05- Sep 06 Oct 06- Sep 07 Oct 07- Sep 08 Oct 08- Sep 09 Oct 09- Sep 10  
 Cum Hours: 14,649.2 5,854.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0  
 Yr Total Cost: 14,649.2 20,503.3 20,503.3 20,503.3 20,503.3 20,503.3 20,503.3 20,503.3 20,503.3 20,503.3 20,503.3 20,503.3  
 Cum Total Cost: 422,775 600,609 600,609 600,609 600,609 600,609 600,609 600,609 600,609 600,609 600,609 600,609

**Resource: OPRMGR 946**  
**Res Dept: 946**  
**Class: LABOR**  
**EOC: SAL**  
**OPERATIONS MGR**  
**Overtime:**  
 Yr Hours: Oct 00- Sep 01 Oct 01- Sep 02 Oct 02- Sep 03 Oct 03- Sep 04 Oct 04- Sep 05 Oct 05- Sep 06 Oct 06- Sep 07 Oct 07- Sep 08 Oct 08- Sep 09 Oct 09- Sep 10  
 Cum Hours: 6,614.6 2,336.8 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0  
 Yr Total Cost: 6,614.6 8,951.3 8,951.3 8,951.3 8,951.3 8,951.3 8,951.3 8,951.3 8,951.3 8,951.3 8,951.3  
 Cum Total Cost: 345,810 474,399 474,399 474,399 474,399 474,399 474,399 474,399 474,399 474,399 474,399

**Resource: PARSONS 946**  
**Res Dept: 946**  
**Class: SUBCONTRACTORS**  
**EOC: SUB**  
**PARSONS**  
**Overtime:**  
 Yr Units: Oct 00- Sep 01 Oct 01- Sep 02 Oct 02- Sep 03 Oct 03- Sep 04 Oct 04- Sep 05 Oct 05- Sep 06 Oct 06- Sep 07 Oct 07- Sep 08 Oct 08- Sep 09 Oct 09- Sep 10  
 Cum Units: 10,000.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0  
 Yr Total Cost: 10,000.0 10,000.0 10,000.0 10,000.0 10,000.0 10,000.0 10,000.0 10,000.0 10,000.0 10,000.0 10,000.0  
 Cum Total Cost: 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000

**Resource: PROWHA 946**  
**Res Dept: 946**  
**Class: LABOR**  
**EOC: HOU**  
**PROF WAREHOUSE ATTN**  
**Overtime:**  
 Yr Hours: Oct 00- Sep 01 Oct 01- Sep 02 Oct 02- Sep 03 Oct 03- Sep 04 Oct 04- Sep 05 Oct 05- Sep 06 Oct 06- Sep 07 Oct 07- Sep 08 Oct 08- Sep 09 Oct 09- Sep 10  
 Cum Hours: 1,497.6 354.1 1,851.8 1,851.8 1,851.8 1,851.8 1,851.8 1,851.8 1,851.8 1,851.8 1,851.8  
 Yr Total Cost: 39,792 9,904 49,696 49,696 49,696 49,696 49,696 49,696 49,696 49,696 49,696  
 Cum Total Cost: 39,792 49,696 49,696 49,696 49,696 49,696 49,696 49,696 49,696 49,696 49,696

**Resource: QACTEC 946**  
**Res Dept: 946**  
**Class: LABOR**  
**EOC: SAL**  
**QA/QC TECH**  
**Overtime:**  
 Yr Hours: Oct 00- Sep 01 Oct 01- Sep 02 Oct 02- Sep 03 Oct 03- Sep 04 Oct 04- Sep 05 Oct 05- Sep 06 Oct 06- Sep 07 Oct 07- Sep 08 Oct 08- Sep 09 Oct 09- Sep 10  
 Cum Hours: 5,012.5 1,750.4 6,762.9 6,762.9 6,762.9 6,762.9 6,762.9 6,762.9 6,762.9 6,762.9 6,762.9  
 Yr Total Cost: 154,786 56,893 211,680 211,680 211,680 211,680 211,680 211,680 211,680 211,680 211,680  
 Cum Total Cost: 154,786 211,680 211,680 211,680 211,680 211,680 211,680 211,680 211,680 211,680 211,680

**Resource: RADTEC 946**  
**Res Dept: 946**  
**Class: LABOR**  
**EOC: SAL**  
**RAD TECH**  
**Overtime:**  
 Yr Hours: Oct 00- Sep 01 Oct 01- Sep 02 Oct 02- Sep 03 Oct 03- Sep 04 Oct 04- Sep 05 Oct 05- Sep 06 Oct 06- Sep 07 Oct 07- Sep 08 Oct 08- Sep 09 Oct 09- Sep 10  
 Cum Hours: 0 0 0 0 0 0 0 0 0 0 0  
 Yr Total Cost: 0 0 0 0 0 0 0 0 0 0 0  
 Cum Total Cost: 0 0 0 0 0 0 0 0 0 0 0

Yr Hours:	8,583.4	3,641.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	8,583.4	12,225.3	12,225.3	12,225.3	12,225.3	12,225.3	12,225.3	12,225.3	12,225.3
Yr Total Cost:	292,523	130,642	0	0	0	0	0	0	0
Cum Total Cost:	292,523	423,165	423,165	423,165	423,165	423,165	423,165	423,165	423,165

Resource:	SERVSUB	EOC:	SUB
Res Dept:	946	Class:	

Yr Units:	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Cum Units:	26,200.0	34,400.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	26,200	60,600.0	60,600.0	60,600.0	60,600.0	60,600.0	60,600.0	60,600.0	60,600.0	60,600.0
Cum Total Cost:	26,200	35,329	0	0	0	0	0	0	0	0
	26,200	61,529	61,529	61,529	61,529	61,529	61,529	61,529	61,529	61,529

Resource:	TRANLAB	EOC:	HOU
Res Dept:	946	Class:	

Yr Hours:	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Cum Hours:	3,000.1	708.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	3,000.1	3,708.3	3,708.3	3,708.3	3,708.3	3,708.3	3,708.3	3,708.3	3,708.3	3,708.3
Cum Total Cost:	74,042	18,399	0	0	0	0	0	0	0	0
	74,042	92,441	92,441	92,441	92,441	92,441	92,441	92,441	92,441	92,441

Resource:	WISE	EOC:	SUB
Res Dept:	946	Class:	

Yr Units:	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Cum Units:	25,000.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	25,000.0	25,000.0	25,000.0	25,000.0	25,000.0	25,000.0	25,000.0	25,000.0	25,000.0	25,000.0
Cum Total Cost:	25,000	0	0	0	0	0	0	0	0	0
	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000

GRAND TOTALS:

Yr Hours:	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Cum Hours:	83,283.6	34,109.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	83,283.6	117,393.4	117,393.4	117,393.4	117,393.4	117,393.4	117,393.4	117,393.4	117,393.4	117,393.4
Cum Total Cost:	3,690,879	1,916,568	0	0	0	0	0	0	0	0
	3,690,879	5,607,447	5,607,447	5,607,447	5,607,447	5,607,447	5,607,447	5,607,447	5,607,447	5,607,447

CAM David Poni REVIEW TEAM John A. Hump CONTROL TEAM Mary E. Stone



**JNMPM**

**NUCLEAR MATERIAL PRODUCT METALS**





DATE: 06-Sep-01  
PROJECT MGR: Donald P  
CAM: Donald P  
PREPARED BY: Mary Ston  
FISCAL YEAR: 2001-200

ESTIMATE SUPPORT WORKSHEET  
FOR ACTIVITY BASED ESTIMATING  
\*\*\*\* STATED IN FY01 DOLLARS \*\*\*\*  
(1 FTE EQUALS 1747 HOURS)

Resource:	HAZWAT	HAZWAT	EOC:	LABOR
Res Dept:	946	Overtime:	HOU	
			Class:	

Resource:	INDHYG	INDUSTRIAL HYGIENIST	EOC:	LABOR
Res Dept:	946	Overtime:	SAL	
		Class:		

Resource:	MAT300	MATERIAL OBJCLASS300	EOC:	MATERIAL
Res Dept:	946	Overtime:	Class:	MAT

Resource:	MPCREP	MATL PROP CTRL REP	EOC:	LABOR
Res Dept:	946	Overtime:	SAL	
		Class:		

Resource:	MV00PR	MOTOR VEHICLE OPER	EOC:	LABOR
Res Dept:	946	Overtime:	HOU	
			Class:	

Yr Hours:	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Cum Hours:	7,647.4	5,926.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	7,647.4	13,574.0	13,574.0	13,574.0	13,574.0	13,574.0	13,574.0	13,574.0	13,574.0	13,574.0
Cum Total Cost:	220,703	180,036	0	0	0	0	0	0	0	0
	220,703	400,739	400,739	400,739	400,739	400,739	400,739	400,739	400,739	400,739

<b>Resource:</b>	<b>OPRMGR</b>										
<b>Res Dept:</b>	<b>946</b>										
	<b>Overtime:</b>										
		<b>Class: LABOR</b>									
		<b>EOC: SAL</b>									
Yr Hours:	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10	
Cum Hours:	2,006.6	1,963.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Yr Total Cost:	2,006.6	3,970.0	3,970.0	3,970.0	3,970.0	3,970.0	3,970.0	3,970.0	3,970.0	3,970.0	
Cum Total Cost:	104,905	108,043	0	0	0	0	0	0	0	0	
	104,905	212,949	212,949	212,949	212,949	212,949	212,949	212,949	212,949	212,949	

<b>Resource:</b>	<b>PROWHA</b>										
<b>Res Dept:</b>	<b>946</b>										
	<b>Overtime:</b>										
		<b>Class: LABOR</b>									
		<b>EOC: HOU</b>									
Yr Hours:	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10	
Cum Hours:	0.0	413.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Yr Total Cost:	0.0	413.0	413.0	413.0	413.0	413.0	413.0	413.0	413.0	413.0	
Cum Total Cost:	0	11,550	0	0	0	0	0	0	0	0	
	0	11,550	11,550	11,550	11,550	11,550	11,550	11,550	11,550	11,550	

<b>Resource:</b>	<b>QAQTEC</b>										
<b>Res Dept:</b>	<b>946</b>										
	<b>Overtime:</b>										
		<b>Class: LABOR</b>									
		<b>EOC: SAL</b>									
Yr Hours:	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10	
Cum Hours:	1,500.4	1,596.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Yr Total Cost:	1,500.4	3,097.0	3,097.0	3,097.0	3,097.0	3,097.0	3,097.0	3,097.0	3,097.0	3,097.0	
Cum Total Cost:	46,333	51,895	0	0	0	0	0	0	0	0	
	46,333	98,228	98,228	98,228	98,228	98,228	98,228	98,228	98,228	98,228	

<b>Resource:</b>	<b>RADTEC</b>										
<b>Res Dept:</b>	<b>946</b>										
	<b>Overtime:</b>										
		<b>Class: LABOR</b>									
		<b>EOC: SAL</b>									
Yr Hours:	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10	
Cum Hours:	4,342.1	3,339.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Yr Total Cost:	4,342.1	7,682.0	7,682.0	7,682.0	7,682.0	7,682.0	7,682.0	7,682.0	7,682.0	7,682.0	
Cum Total Cost:	147,980	119,807	0	0	0	0	0	0	0	0	
	147,980	267,787	267,787	267,787	267,787	267,787	267,787	267,787	267,787	267,787	

<b>Resource:</b>	<b>SERVSUB</b>										
<b>Res Dept:</b>	<b>946</b>										
	<b>Overtime:</b>										
		<b>Class: SUB</b>									
		<b>EOC: SUB</b>									
		<b>Class: SUBCONTRACTORS</b>									
		<b>EOC: SUB</b>									
		<b>EOC: SAL</b>									
Yr Hours:	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10	
Cum Hours:	4,342.1	3,339.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Yr Total Cost:	4,342.1	7,682.0	7,682.0	7,682.0	7,682.0	7,682.0	7,682.0	7,682.0	7,682.0	7,682.0	
Cum Total Cost:	147,980	119,807	0	0	0	0	0	0	0	0	
	147,980	267,787	267,787	267,787	267,787	267,787	267,787	267,787	267,787	267,787	

Yr Units:	Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10
Cum Units:	5,000.0	5,000.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	5,000	10,000.0	10,000.0	10,000.0	10,000.0	10,000.0	10,000.0	10,000.0	10,000.0	10,000.0
Cum Total Cost:	5,000	5,135	0	0	0	0	0	0	0	0
		10,135	10,135	10,135	10,135	10,135	10,135	10,135	10,135	10,135

Resource:	TRNLAB										
Res Dept:	946										
	TRANSPORT LABORER										
	Overtime:										
		Class:									
		EOC:									
		HOU									
		LABOR									
		Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-
		Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10
Yr Hours:		0.0	826.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:		0.0	826.0	826.0	826.0	826.0	826.0	826.0	826.0	826.0	826.0
Yr Total Cost:		0	21,458	0	0	0	0	0	0	0	0
Cum Total Cost:		0	21,458	21,458	21,458	21,458	21,458	21,458	21,458	21,458	21,458

GRAND TOTALS:

Yr Hours:	Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-
Cum Hours:	Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10
Yr Total Cost:	34,349.9	26,419.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Total Cost:	34,349.9	60,769.0	60,769.0	60,769.0	60,769.0	60,769.0	60,769.0	60,769.0	60,769.0	60,769.0
	1,569,355	1,608,833	0	0	0	0	0	0	0	0
	1,569,355	3,178,188	3,178,188	3,178,188	3,178,188	3,178,188	3,178,188	3,178,188	3,178,188	3,178,188

CAM David Pini John W. Hough Matt Jost Mary E Stone

REVIEW TEAM CONTROL TEAM



## **SECTION 2**

### **5.0 RISK PLAN**



# Risk/Opportunity Identification and Analysis Form

Project: Uranium Product Disposition		PBS Number: 8		Total Baseline Dollars (Minimum Case):				\$8,785,635		
Evaluator: J. Samples		Date: May 1, 2001		WBS Number: 1.1.J.B						
CAM: R. Schulten		Date: May 1, 2001		Control Account Number: JNMP						
Project Task	Risk and/or Opportunity	Potential Impact	Internal Or External Driver	Impact Cost \$ (Maximum Case)	Risk Impact Level	Risk Probability %	Risk Probability Level	Probable Cost \$ (Likeliest Case)	Risk Critical Value	Risk Handling Strategy
Process changes for hydrogen generating & pyrophoric material	Additional requirements & costly steps to movement and packaging operations	Slow down the container handling and repackaging operations	Internal	\$688,000	2	20	2	\$137,600	2	Accept
Repackaging compounds cost more due to unknowns in the material and/or Vacuum Transfer Equipment does not work as expected	Slower, manual repackaging of the material	Schedule and cost impact	Internal	\$4,100,000	3	40	32	\$1,640,000	3	Accept
Procurement/delivery delay for shipping containers	Delays packaging for shipment	Schedule and cost impact	Internal	\$200,000	2	50	3	\$100,000	2	Reduce
Material does not conform to acceptable payloads for shipping containers	Material would need special shipping exemptions pursued (additional beyond baseline expectations)	Additional cost for shipments, schedule delay.	Internal	\$150,000	2	75	4	\$112,500	3	Accept
Total:				\$5,138,000				\$1,990,100		
Changes in container configuration needed to support regulatory changes	Would require acquiring another package and repackaging material into it.	Schedule and cost impact	External	\$4,000,000	4	20	2	\$800,000	5	
Portsmouth shuts down or rejects remaining material	Only outlet for this material	Stop shipping NM & must treat the balance remaining on site as waste	External	\$13,000,000	5	20	3	\$2,600,000	10	
Nuclear material at Portsmouth is declared waste	FEMP would have to pay for treatment and disposal costs	Material would require treatment, packaging, and transport to a disposal facility	External	\$55,300,000	5	10	2	\$5,530,000	8	





**Uranium Waste  
Disposition**



**WBS DICTIONARY**  
**CONTROL ACCOUNT/CHARGE NUMBER**



U.S. DEPARTMENT OF ENERGY  
WORK BREAKDOWN STRUCTURE DICTIONARY  
PART II - ELEMENT DEFINITION

1. PROJECT TITLE  FEMP (DEFENSE)	2. DATE OF CONTRACT  12/01/2000
3. IDENTIFICATION NUMBER  DE-AC24-01OH20115	4. INDEX LINE NO.  69
5. WBS ELEMENT CODE  1.1.J.C	6. WBS ELEMENT TITLE  URANIUM WASTE
7. APPROVED CP NO.  ORIGINAL SCOPE PER CP# FY01-0115-0008-00	8. DATE OF CHANGES  12/01/2000
9. SYSTEM DESIGN DESCRIPTION  CERCLA/ACA	10. BUDGET AND REPORTING NUMBER  EW05H3080
11. ELEMENT TASK DESCRIPTION  <p><b><u>a. ELEMENTS OF COST:</u></b></p> <p>Labor Materials Subcontracts ODCs</p> <p><b><u>b. TECHNICAL CONTENT:</u></b></p> <p>This element provides for uranium waste field planning, field characterization, processing, packaging/repackaging, and shipping of metals and compounds to the Nevada Test Site (NTS) or to an approved treatment/disposal facility. Five categories comprise the waste streams addressed under this code: fissile excepted and &lt;1% U235 compounds; fissile excepted and depleted metals; RCRA compounds, RCRA T-Hoppers, and sealed sources; fissile metals; and fissile compounds.</p> <p>The earned value method for this work package is percent complete.</p> <p><b><u>c. SCOPE OF WORK:</u></b></p> <p>Activities include:</p> <ul style="list-style-type: none"> <li>• Planning for direct work (task order walkdowns and daily safety briefings).</li> <li>• Field characterization (visual inspections) and photographs.</li> <li>• Process (hydrogen monitoring, decant, vent) containers.</li> <li>• Repackage compounds and metals streams for shipment to the Nevada Test Site (NTS), Nuclear Fuel Services, Inc. (NFS), or other approved off-site treatment vendor.</li> <li>• Ship repackaged waste.</li> <li>• Transport fissile compounds to WPRAP facility for down-blending and loading into rail cars for shipment to Envirocare of Utah, Inc.</li> <li>• Package and ship T-Hopper contents for off-site treatment and disposal.</li> </ul>	

U.S. DEPARTMENT OF ENERGY  
WORK BREAKDOWN STRUCTURE DICTIONARY  
PART II - ELEMENT DEFINITION

1. PROJECT TITLE <b>FEMP (DEFENSE)</b>	2. DATE OF CONTRACT <b>12/01/2000</b>		
3. IDENTIFICATION NUMBER <b>DE-AC24-01OH20115</b>		4. INDEX LINE NO. <b>69</b>	
5. WBS ELEMENT CODE <b>1.1.J.C</b>	6. WBS ELEMENT TITLE <b>URANIUM WASTE</b>		
7. APPROVED CP NO. <b>ORIGINAL SCOPE PER CP# FY01-0115-0008-00</b>		8. DATE OF CHANGES <b>12/01/2000</b>	
9. SYSTEM DESIGN DESCRIPTION <b>CERCLA/ACA</b>	10. BUDGET AND REPORTING NUMBER <b>EW05H3080</b>		
11. ELEMENT TASK DESCRIPTION <b>Package and ship sealed sources for off-site disposal.</b>			

**WORK SCOPE DEFINITION**  
(Control Account)

1. PROJECT TITLE  FEMP (DEFENSE)		2. DATE  09/07/2001	Page 1
3. WBS ELEMENT CODE  1.1.J.C	4. WBS ELEMENT TITLE/NAME  URANIUM WASTE		
5. PERFORMING DIV/DEPARTMENT CODE  46	6. ORIGINATOR NAME/PHONE  M. FROST/648-5685	7. WBS ELEMENT MANAGER  D. PAINE/648-5310	
8. BUDGET AND REPORTING NUMBER  EW05H3080	9. BUDGET TITLE  NUCLEAR MATERIALS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE?  ORIGINAL SCOPE PER CP# FY01-0115-0008-00		11. ESTIMATED START / COMPLETION DATE  12/2000 - 09/2005	
12. TASK IDENTIFICATION (CONTROL ACCOUNT)  JUWP	13. TASK DESCRIPTION (ONE LINE)  URANIUM WASTE		
<div>14. ELEMENT TASK DESCRIPTION</div> <div><b><u>a. ELEMENTS OF COST:</u></b></div> <div>Labor Materials Subcontracts ODCs</div> <div><b><u>b. TECHNICAL CONTENT:</u></b></div> <div>This element provides for uranium waste field planning, field characterization, processing, packaging/repackaging, and shipping of metals and compounds to the Nevada Test Site (NTS) or to an approved treatment/disposal facility. Five categories comprise the waste streams addressed under this code: fissile excepted and &lt;1% U235 compounds; fissile excepted and depleted metals; RCRA compounds, RCRA T-Hoppers, and sealed sources; fissile metals; and fissile compounds.</div> <div>The earned value method for this work package is percent complete.</div> <div><b><u>c. SCOPE OF WORK:</u></b></div> <div>Activities include:</div> <ul style="list-style-type: none"><li>• Planning for direct work (task order walkdowns and daily safety briefings).</li><li>• Field characterization (visual inspections) and photographs.</li><li>• Process (hydrogen monitoring, decant, vent) containers.</li><li>• Repackage compounds and metals streams for shipment to the Nevada Test Site (NTS), Nuclear Fuel Services, Inc. (NFS), or other approved off-site treatment vendor.</li><li>• Ship repackaged waste.</li></ul>			
Project Manager  <i>Todd Paine</i>	Control Account Manager  <i>Todd Paine</i>	Control Team Manager  <i>Mary E. Stone</i>	

## WORK SCOPE DEFINITION (Control Account)

1. PROJECT TITLE  <b>FEMP (DEFENSE)</b>		2. DATE  09/07/2001	Page 2
3. WBS ELEMENT CODE  1.1.J.C	4. WBS ELEMENT TITLE/NAME  URANIUM WASTE		
5. PERFORMING DIV/DEPARTMENT CODE  46	6. ORIGINATOR NAME/PHONE  M. FROST/648-5685	7. WBS ELEMENT MANAGER  D. PAINE/648-5310	
8. BUDGET AND REPORTING NUMBER  EW05H3080	9. BUDGET TITLE  NUCLEAR MATERIALS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE?  ORIGINAL SCOPE PER CP# FY01-0115-0008-00		11. ESTIMATED START / COMPLETION DATE  12/2000 - 09/2005	
12. TASK IDENTIFICATION (CONTROL ACCOUNT)  JUWP	13. TASK DESCRIPTION (ONE LINE)  URANIUM WASTE		



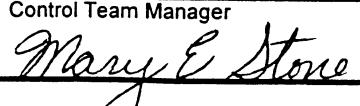
<p>14. ELEMENT TASK DESCRIPTION</p> <ul style="list-style-type: none"> <li>· Transport fissile compounds to WPRAP facility for down-blending and loading rail cars for shipment to Envirocare of Utah, Inc.</li> <li>· Package and ship T-Hopper contents for off-site treatment.</li> <li>· Package and ship sealed sources for off-site disposal.</li> </ul> <p><b><u>d. WORK SPECIFICALLY EXCLUDED:</u></b></p> <ul style="list-style-type: none"> <li>· Operations Assurance manpower to perform Standard Startup Reviews (covered in PBS 12)</li> <li>· Warehousing of uranium waste. (covered in WBS Element 1.2.C)</li> <li>· Planning, characterization, processing, packaging and shipment of nuclear product. (covered in JNMS, JNMP)</li> <li>· Routine maintenance of equipment and facilities. (covered in PBS01)</li> <li>· Manpower to deliver Personal Protective Equipment and manage the Satellite Clothing Area (SCA) support. (covered in PBS01)</li> <li>· Shipping to an international location.</li> <li>· Disposition of nuclear materials generated by other remediation activities.</li> <li>· Uranium size reduction.</li> <li>· On-site hazardous waste treatment.</li> <li>· Costs for disposal at NTS or Envirocare of Utah, Inc.</li> </ul>
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**WORK SCOPE DEFINITION**  
(Work Package)

1. PROJECT TITLE  <b>FEMP (DEFENSE)</b>		2. DATE  09/07/2001	Page 1
3. WBS ELEMENT CODE  1.1.J.C	4. WBS ELEMENT TITLE/NAME  URANIUM WASTE		
5. PERFORMING DIV/DEPARTMENT CODE  46	6. ORIGINATOR NAME/PHONE  M. FROST/648-5685	7. WBS ELEMENT MANAGER  D. PAINE/648-5310	
8. BUDGET AND REPORTING NUMBER  EW05H3080	9. BUDGET TITLE  NUCLEAR MATERIALS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE?  ORIGINAL SCOPE PER CP# FY01-0115-0008-00		11. ESTIMATED START / COMPLETION DATE  07/2001 - 02/2002	
12. TASK IDENTIFICATION (WORK PACKAGE)  JUWPA	13. TASK DESCRIPTION (ONE LINE)  FISSILE EXCEPTED AND <=1% COMPOUNDS		

<p><b>14. ELEMENT TASK DESCRIPTION</b></p> <p><b><u>a. ELEMENTS OF COST:</u></b></p> <p>Labor Materials Subcontracts ODCs</p> <p><b><u>b. TECHNICAL CONTENT:</u></b></p> <p>This work package provides for the processing, repackaging and preparation of fissile excepted and &lt;=1% U235 compounds for shipment to NTS.</p> <p>Fissile excepted and &lt;=1% U235 compounds consists of the following as of December 1, 2000:</p> <ul style="list-style-type: none"><li>• 108 containers of depleted compounds and trash</li><li>• 3,261 containers of &lt;=1% U235 enriched compounds</li><li>• 31 containers of reject normal compounds</li><li>• 45 containers of reject miscellaneous depleted UF4</li><li>• 530 containers of reject &lt;=1% U235 U308</li><li>• 41 containers of reject &lt;=1% U235 miscellaneous compounds</li><li>• 15 containers of fissile excepted compounds</li></ul> <p>The earned value method for this work package is percent complete.</p> <p><b><u>c. SCOPE OF WORK:</u></b></p> <p>Activities include:</p> <ul style="list-style-type: none"><li>• Assuring work can be and is performed in a safe manner.</li><li>• Identifying the specific containers associated with each waste stream.</li></ul>
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Project Manager 	Control Account Manager 	Control Team Manager 
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## WORK SCOPE DEFINITION (Work Package)

1. PROJECT TITLE  FEMP (DEFENSE)		2. DATE  09/07/2001	Page 2
3. WBS ELEMENT CODE  1.1.J.C	4. WBS ELEMENT TITLE/NAME  URANIUM WASTE		
5. PERFORMING DIV/DEPARTMENT CODE  46	6. ORIGINATOR NAME/PHONE  M. FROST/648-5685	7. WBS ELEMENT MANAGER  D. PAINE/648-5310	
8. BUDGET AND REPORTING NUMBER  EW05H3080	9. BUDGET TITLE  NUCLEAR MATERIALS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE?  ORIGINAL SCOPE PER CP# FY01-0115-0008-00		11. ESTIMATED START / COMPLETION DATE  07/2001 - 02/2002	
12. TASK IDENTIFICATION (WORK PACKAGE)  JUWPA	13. TASK DESCRIPTION (ONE LINE)  FISSILE EXCEPTED AND <=1% COMPOUNDS		

### 14. ELEMENT TASK DESCRIPTION

- Implementing task orders for pulling the material from inventory.
- Locating and removing the material from inventory.
- Visually inspecting the contents of containers.
- Decanting containers as necessary.
- Transporting containers to the packaging area.
- Supporting independent assessments of work processes and equipment associated with these processes.
- Packaging and repackaging all compounds for off-site shipment.
- Transport of repackaged material to a shipment preparation area.
- Labeling of material for shipment and preparing paperwork for shipment off-site.
- Shipment of material to NTS.
- Costs for personal protective equipment, materials and supplies, packaging materials, and packaging equipment.
- Waste Generator Services (Low Level Waste Project) provides the labor to prepare this population for shipment to NTS.

### d. WORK SPECIFICALLY EXCLUDED:

- Operations Assurance manpower to perform Standard Startup Reviews (covered in PBS 12)
- Warehousing of uranium waste. (covered in WBS Element 1.2.C)
- Planning, characterization, processing, packaging and shipment of nuclear product. (covered in JNMS, JNMP)
- Routine maintenance of equipment and facilities. (covered in PBS01)
- Manpower to deliver Personal Protective Equipment and manage the Satellite Clothing Area (SCA) support. (covered in PBS01)
- Shipping to an international location.
- Disposition of nuclear materials generated by other remediation activities.
- Uranium size reduction.
- On-site hazardous waste treatment.
- Costs for disposal at NTS or Envirocare of Utah, Inc.

**WORK SCOPE DEFINITION**  
(Work Package)

1. PROJECT TITLE

FEMP (DEFENSE)

2. DATE

09/07/2001

Page 1

3. WBS ELEMENT CODE

1.1.1.J.C

4. WBS ELEMENT TITLE/NAME

URANIUM WASTE

5. PERFORMING DIV/DEPARTMENT CODE

46

6. ORIGINATOR NAME/PHONE

M. FROST/648-5685

7. WBS ELEMENT MANAGER

D. PAINE/648-5310

8. BUDGET AND REPORTING NUMBER

EW05H3080

9. BUDGET TITLE

NUCLEAR MATERIALS

10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE?

ORIGINAL SCOPE PER CP# FY01-0115-0008-00

11. ESTIMATED START / COMPLETION DATE

12/2000 - 09/2003

12. TASK IDENTIFICATION (WORK PACKAGE)

JUWPB

13. TASK DESCRIPTION (ONE LINE)

FISSILE EXCEPTED AND DEPLETED METAL

14. ELEMENT TASK DESCRIPTION

**a. ELEMENTS OF COST:**

Labor  
Materials  
Subcontracts  
ODCs

**b. TECHNICAL CONTENT:**

This work package provides for the processing, repackaging and preparation of fissile excepted and depleted metals for shipment to NTS.

Fissile excepted and depleted metal consists of the following as of December 1, 2000:

- 1,337 containers of depleted metal
- 201 containers of depleted ingots and derbies
- 34 containers of reject normal drums of metal
- 20 containers of reject miscellaneous depleted metal

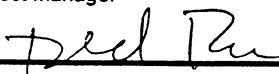
The earned value method for this work package is percent complete.

**c. SCOPE OF WORK:**

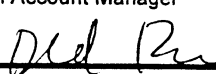
Activities include:

- Assuring work can be and is performed in a safe manner.
- Identifying the specific containers associated with each waste stream.
- Implementing task orders for pulling the material from inventory.
- Locating and removing the material from inventory.

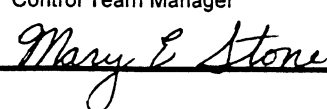
Project Manager



Control Account Manager



Control Team Manager



## WORK SCOPE DEFINITION (Work Package)

1. PROJECT TITLE  <b>FEMP (DEFENSE)</b>		2. DATE  <b>09/07/2001</b>	Page 2
3. WBS ELEMENT CODE  <b>1.1.1.J.C</b>	4. WBS ELEMENT TITLE/NAME  <b>URANIUM WASTE</b>		
5. PERFORMING DIV/DEPARTMENT CODE  <b>46</b>	6. ORIGINATOR NAME/PHONE  <b>M. FROST/648-5685</b>	7. WBS ELEMENT MANAGER  <b>D. PAINE/648-5310</b>	
8. BUDGET AND REPORTING NUMBER  <b>EW05H3080</b>	9. BUDGET TITLE  <b>NUCLEAR MATERIALS</b>		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE?  <b>ORIGINAL SCOPE PER CP# FY01-0115-0008-00</b>		11. ESTIMATED START / COMPLETION DATE  <b>12/2000 - 09/2003</b>	
12. TASK IDENTIFICATION (WORK PACKAGE)  <b>JUWPB</b>	13. TASK DESCRIPTION (ONE LINE)  <b>FISSILE EXCEPTED AND DEPLETED METAL</b>		

### 14. ELEMENT TASK DESCRIPTION

- Visually inspecting the contents of containers.
- Processing (hydrogen monitoring, venting, and decanting) containers as necessary.
- Transporting containers to the packaging area.
- Supporting independent assessments of work processes and equipment associated with these processes.
- Packaging all metals for off-site shipment.
- Transport of repackaged material to a shipment preparation area.
- Labeling of material for shipment and preparing paperwork for shipment off-site.
- Shipment of material to NTS.
- Costs for personal protective equipment, materials and supplies, packaging materials, and packaging equipment.

### d. WORK SPECIFICALLY EXCLUDED:

- Operations Assurance manpower to perform Standard Startup Reviews (covered in PBS 12)
- Warehousing of uranium waste. (covered in WBS Element 1.2.C)
- Planning, characterization, processing, packaging and shipment of nuclear product. (covered in JNMS, JNMP)
- Routine maintenance of equipment and facilities. (covered in PBS01)
- Manpower to deliver Personal Protective Equipment and manage the Satellite Clothing Area (SCA) support. (covered in PBS01)
- Shipping to an international location.
- Disposition of nuclear materials generated by other remediation activities.
- Uranium size reduction.
- On-site hazardous waste treatment.
- Costs for disposal at NTS or Envirocare of Utah, Inc.

## WORK SCOPE DEFINITION (Work Package)

1. PROJECT TITLE  <b>FEMP (DEFENSE)</b>		2. DATE  09/07/2001	Page 1
3. WBS ELEMENT CODE  1.1.J.C	4. WBS ELEMENT TITLE/NAME  URANIUM WASTE		
5. PERFORMING DIV/DEPARTMENT CODE  46	6. ORIGINATOR NAME/PHONE  M. FROST/648-5685	7. WBS ELEMENT MANAGER  D. PAINE/648-5310	
8. BUDGET AND REPORTING NUMBER  EW05H3080	9. BUDGET TITLE  NUCLEAR MATERIALS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE?  ORIGINAL SCOPE PER CP# FY01-0115-0008-00		11. ESTIMATED START / COMPLETION DATE  10/2001 - 05/2004	
12. TASK IDENTIFICATION (WORK PACKAGE)  JUWPC	13. TASK DESCRIPTION (ONE LINE)  RCRA MATERIAL / SEALED SOURCES		

14. ELEMENT TASK DESCRIPTION

**a. ELEMENTS OF COST:**

Labor  
Materials  
Subcontracts  
ODCs

**b. TECHNICAL CONTENT:**

This work package provides for the sampling and analysis of the RCRA compounds, packaging the T-Hopper contents for off-site treatment and disposal, and packaging the sealed sources for off-site disposal.

RCRA material / sealed sources consist of the following as of December 1, 2000:

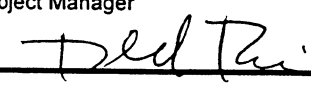
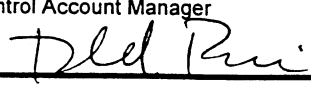
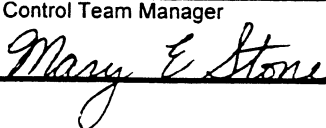
- 256 containers of <=1% U235 RCRA compounds
- 132 containers of >1% U235 RCRA compounds
- 2 T-hoppers
- 624 sealed sources

The earned value method for this work package is percent complete.

**c. SCOPE OF WORK:**

Activities include:

- Assuring work can be and is performed in a safe manner.
- Identifying the specific containers associated with each waste stream.
- Implementing task orders for pulling the material from inventory.
- Locating and removing the material from inventory.
- Visually inspecting the contents of containers.

Project Manager 	Control Account Manager 	Control Team Manager 
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## WORK SCOPE DEFINITION (Work Package)

1. PROJECT TITLE  <b>FEMP (DEFENSE)</b>		2. DATE  09/07/2001	Page 2
3. WBS ELEMENT CODE  1.1.J.C	4. WBS ELEMENT TITLE/NAME  URANIUM WASTE		
5. PERFORMING DIV/DEPARTMENT CODE  46	6. ORIGINATOR NAME/PHONE  M. FROST/648-5685	7. WBS ELEMENT MANAGER  D. PAINE/648-5310	
8. BUDGET AND REPORTING NUMBER  EW05H3080	9. BUDGET TITLE  NUCLEAR MATERIALS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE?  ORIGINAL SCOPE PER CP# FY01-0115-0008-00		11. ESTIMATED START / COMPLETION DATE  10/2001 - 05/2004	
12. TASK IDENTIFICATION (WORK PACKAGE)  JUWPC	13. TASK DESCRIPTION (ONE LINE)  RCRA MATERIAL / SEALED SOURCES		

### 14. ELEMENT TASK DESCRIPTION

- Processing (hydrogen monitoring, venting, and decanting) containers as necessary.
- Transporting containers to the packaging area.
- Supporting independent assessments of work processes and equipment associated with these processes.
- Packaging materials for off-site shipment.
- Transport of repackaged material to a shipment preparation area.
- Labeling of material for shipment and preparing paperwork for shipment off-site.
- Shipment of material to NTS or other approved facilities.
- Costs for personal protective equipment, materials and supplies, packaging materials, and packaging equipment.
- Sampling and analysis of RCRA compounds.
- Transport of >1% U235 RCRA compounds (once re-characterized) for down-blending and loading into railcars at WPRAP facility.
- Packaging sealed sources for shipment to NTS or other approved facility.
- Packaging T-Hopper contents for shipment to a treatment facility.
- Packaging the T-Hoppers for shipment to NTS.

### d. WORK SPECIFICALLY EXCLUDED:

- Operations Assurance manpower to perform Standard Startup Reviews (covered in PBS 12)
- Warehousing of uranium waste. (covered in WBS Element 1.2.C)
- Planning, characterization, processing, packaging and shipment of nuclear product. (covered in JNMS, JNMP)
- Routine maintenance of equipment and facilities. (covered in PBS01)
- Manpower to deliver Personal Protective Equipment and manage the Satellite Clothing Area (SCA) support. (covered in PBS01)
- Shipping to an international location.
- Disposition of nuclear materials generated by other remediation activities.
- Uranium size reduction.
- On-site hazardous waste treatment.
- Costs for disposal at NTS or Envirocare of Utah, Inc.
- WPRAP blending operations. (covered in PBS05)

**WORK SCOPE DEFINITION**  
(Work Package)

1. PROJECT TITLE  <b>FEMP (DEFENSE)</b>		2. DATE  <b>09/07/2001</b>	Page 3
3. WBS ELEMENT CODE  <b>1.1.J.C</b>	4. WBS ELEMENT TITLE/NAME  <b>URANIUM WASTE</b>		
5. PERFORMING DIV/DEPARTMENT CODE  <b>46</b>	6. ORIGINATOR NAME/PHONE  <b>M. FROST/648-5685</b>	7. WBS ELEMENT MANAGER  <b>D. PAINE/648-5310</b>	
8. BUDGET AND REPORTING NUMBER  <b>EW05H3080</b>	9. BUDGET TITLE  <b>NUCLEAR MATERIALS</b>		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE?  <b>ORIGINAL SCOPE PER CP# FY01-0115-0008-00</b>		11. ESTIMATED START / COMPLETION DATE  <b>10/2001 - 05/2004</b>	
12. TASK IDENTIFICATION (WORK PACKAGE)  <b>JUWPC</b>	13. TASK DESCRIPTION (ONE LINE)  <b>RCRA MATERIAL / SEALED SOURCES</b>		
14. ELEMENT TASK DESCRIPTION  · WPRAP facility operations. (covered in PBS05)			

**WORK SCOPE DEFINITION**  
(Work Package)

1. PROJECT TITLE

FEMP (DEFENSE)

2. DATE

09/07/2001

Page 1

3. WBS ELEMENT CODE

1.1.J.C

4. WBS ELEMENT TITLE/NAME

URANIUM WASTE

5. PERFORMING DIV/DEPARTMENT CODE

46

6. ORIGINATOR NAME/PHONE

M. FROST/648-5685

7. WBS ELEMENT MANAGER

D. PAINE/648-5310

8. BUDGET AND REPORTING NUMBER

EW05H3080

9. BUDGET TITLE

NUCLEAR MATERIALS

10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE?

ORIGINAL SCOPE PER CP# FY01-0115-0008-00

11. ESTIMATED START / COMPLETION DATE

09/2002 - 08/2003

12. TASK IDENTIFICATION (WORK PACKAGE)

JUWPD

13. TASK DESCRIPTION (ONE LINE)

FISSILE COMPOUNDS

14. ELEMENT TASK DESCRIPTION

**a. ELEMENTS OF COST:**

Labor  
Materials  
Subcontracts  
ODCs

**b. TECHNICAL CONTENT:**

This work package provides for the processing, visual inspection, and transport of fissile compounds to the WPRAP facility.

Fissile compounds consist of the following as of December 1, 2000:

- 1,392 containers of >1% U235 enriched compounds
- 10 containers of reject >1% U235 UO3
- 145 containers of reject >1% U235 UF4
- 664 containers of reject >1% U235 U3O8
- 180 containers of reject >1% U235 miscellaneous compounds

The earned value method for this work package is percent complete.

**c. SCOPE OF WORK:**

Activities include:

- Assuring work can be and is performed in a safe manner.
- Identifying the specific containers associated with each waste stream.
- Implementing task orders for pulling the material from inventory.
- Locating and removing the material from inventory.
- Visually inspecting the contents of containers.

Project Manager

Control Account Manager

Control Team Manager



**WORK SCOPE DEFINITION**  
(Work Package)

1. PROJECT TITLE  <b>FEMP (DEFENSE)</b>		2. DATE  <b>09/07/2001</b>	Page 2
3. WBS ELEMENT CODE  <b>1.1.J.C</b>	4. WBS ELEMENT TITLE/NAME  <b>URANIUM WASTE</b>		
5. PERFORMING DIV/DEPARTMENT CODE  <b>46</b>	6. ORIGINATOR NAME/PHONE  <b>M. FROST/648-5685</b>	7. WBS ELEMENT MANAGER  <b>D. PAINE/648-5310</b>	
8. BUDGET AND REPORTING NUMBER  <b>EW05H3080</b>	9. BUDGET TITLE  <b>NUCLEAR MATERIALS</b>		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE?  <b>ORIGINAL SCOPE PER CP# FY01-0115-0008-00</b>		11. ESTIMATED START / COMPLETION DATE  <b>09/2002 - 08/2003</b>	
12. TASK IDENTIFICATION (WORK PACKAGE)  <b>JUWPD</b>	13. TASK DESCRIPTION (ONE LINE)  <b>FISSILE COMPOUNDS</b>		

14. ELEMENT TASK DESCRIPTION

- Processing containers as necessary.
- Transporting containers to WPRAP facility for soil down-blending.
- Supporting independent assessments of work processes and equipment associated with these processes.
- One shift operation to support WPRAP operations.

**d. WORK SPECIFICALLY EXCLUDED:**

- Operations Assurance manpower to perform Standard Startup Reviews (covered in PBS 12)
- Warehousing of uranium waste. (covered in WBS Element 1.2.C)
- Planning, characterization, processing, packaging and shipment of nuclear product. (covered in JNMS, JNMP)
- Routine maintenance of equipment and facilities. (covered in PBS01)
- Manpower to deliver Personal Protective Equipment and manage the Satellite Clothing Area (SCA) support. (covered in PBS01)
- Shipping to an international location.
- Disposition of nuclear materials generated by other remediation activities.
- Costs for disposal at Envirocare of Utah, Inc.
- WPRAP blending operations. (covered in PBS05)
- WPRAP facility operations. (covered in PBS05)
- Transportation costs to Envirocare. (covered in PBS05)

**WORK SCOPE DEFINITION**  
(Work Package)

1. PROJECT TITLE

FEMP (DEFENSE)

2. DATE

09/07/2001

Page 1

3. WBS ELEMENT CODE

1.1.J.C

4. WBS ELEMENT TITLE/NAME

URANIUM WASTE

5. PERFORMING DIV/DEPARTMENT CODE

46

6. ORIGINATOR NAME/PHONE

M. FROST/648-5685

7. WBS ELEMENT MANAGER

D. PAINE/648-5310

8. BUDGET AND REPORTING NUMBER

EW05H3080

9. BUDGET TITLE

NUCLEAR MATERIALS

10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE?

ORIGINAL SCOPE PER CP# FY01-0115-0008-00

11. ESTIMATED START / COMPLETION DATE

07/2001 - 09/2005

12. TASK IDENTIFICATION (WORK PACKAGE)

JUWPE

13. TASK DESCRIPTION (ONE LINE)

FISSILE METALS

14. ELEMENT TASK DESCRIPTION

**a. ELEMENTS OF COST:**

Labor  
Materials  
Subcontracts  
ODCs

**b. TECHNICAL CONTENT:**

This work package provides for the processing (venting, hydrogen monitoring, decanting) and repackaging the fissile metals for shipment to NFS.

Fissile metals consist of the following as of December 1, 2000:

- 419 containers of  $\leq 1\%$  U235 enriched metal
- 165 containers of  $> 1\%$  U235 enriched metal
- 10 containers of reject miscellaneous  $> 1\%$  U235 enriched metal

The earned value method for this work package is percent complete.

**c. SCOPE OF WORK:**

Activities include:

- Assuring work can be and is performed in a safe manner.
- Identifying the specific containers associated with each waste stream.
- Implementing task orders for pulling the material from inventory.
- Locating and removing the material from inventory.
- Visually inspecting the contents of containers.
- Processing (hydrogen monitoring, venting, and decanting) containers as necessary.

Project Manager

Control Account Manager

Control Team Manager

## WORK SCOPE DEFINITION (Work Package)

1. PROJECT TITLE  <b>FEMP (DEFENSE)</b>		2. DATE  09/07/2001	Page 2
3. WBS ELEMENT CODE  1.1.J.C	4. WBS ELEMENT TITLE/NAME  URANIUM WASTE		
5. PERFORMING DIV/DEPARTMENT CODE  46	6. ORIGINATOR NAME/PHONE  M. FROST/648-5685	7. WBS ELEMENT MANAGER  D. PAINE/648-5310	
8. BUDGET AND REPORTING NUMBER  EW05H3080	9. BUDGET TITLE  NUCLEAR MATERIALS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE?  ORIGINAL SCOPE PER CP# FY01-0115-0008-00		11. ESTIMATED START / COMPLETION DATE  07/2001 - 09/2005	
12. TASK IDENTIFICATION (WORK PACKAGE)  JUWPE	13. TASK DESCRIPTION (ONE LINE)  FISSILE METALS		

### 14. ELEMENT TASK DESCRIPTION

- Transporting containers to the packaging area.
- Supporting independent assessments of work processes and equipment associated with these processes.
- Packaging materials for off-site shipment.
- Transport of repackaged material to a shipment preparation area.
- Labeling of material for shipment and preparing paperwork for shipment off-site.
- Shipment of material to NFS.
- Costs for personal protective equipment, materials and supplies, packaging materials, and packaging equipment.
- NFS subcontract to process fissile metals.

### d. WORK SPECIFICALLY EXCLUDED:

- Operations Assurance manpower to perform Standard Startup Reviews (covered in PBS 12)
- Warehousing of uranium waste. (covered in WBS Element 1.2.C)
- Planning, characterization, processing, packaging and shipment of nuclear product. (covered in JNMS, JNMP)
- Routine maintenance of equipment and facilities. (covered in PBS01)
- Manpower to deliver Personal Protective Equipment and manage the Satellite Clothing Area (SCA) support. (covered in PBS01)
- Shipping to an international location.
- Disposition of nuclear materials generated by other remediation activities.
- NFS Home Office Support



## **SECTION 3**

### **1.0 NARRATIVE**



3. PROJECT TITLE: NUCLEAR MATERIALS DISPOSITION	2. DATE: 09/10/01	3. PBS#: 08
4. WBS ELEMENT CODE: 1.1.J.C.	5. WBS ELEMENT TITLE: URANIUM WASTE DISPOSITION	
6. CAM NAME/ PHONE: DON PAINE/ROBERT SCHULTEN	7. CAM SIGNATURE:	
8. ORIGINAL/ CHANGE SCOPE/ PER CP#:	9. CONTROL ACCOUNT: JUWP	

### SECTION 3: JUWP – URANIUM WASTE DISPOSITION

#### 1.0 NARRATIVE

##### 1.1 OVERVIEW

Control account JUWP will provide for uranium waste planning (field supervisor planning to execute task orders, plan work assignments, etc.), characterization, processing, packaging/repackaging, and shipping to the Nevada Test Site (NTS) or to an approved treatment/disposal facility. There are two types of waste, metals and compounds. The waste streams have been divided into five categories: fissile excepted and < 1% U<sup>235</sup> compounds (JUWPA); fissile excepted and depleted metals (JUWPB); RCRA compounds, RCRA T-Hoppers and sealed sources (JUWPC); fissile compounds (JUWPD); and fissile metals (JUWPE). The materials will be prepared in accordance with off-site location specifications and applicable transportation guidelines. Fissile excepted material is fissile material that has met the exceptions stated in 49 CFR 173.453.

##### 1.2 ASSUMPTIONS/EXCLUSIONS

###### 1.2.1 Assumptions

- 1) Project execution will be in Buildings 80, 56A, 71, 77 and 30A. Relocating to other sites will entail increased cost for setup. ~~A minimum of a six month schedule delay would be realized and cost would depend on the final location.~~
- 2) Current Department of Transportation (DOT) regulations and requirements for shipping packages and shipment processes do not materially change.
- 3) ~~Over the road transportation routes currently in use remain in use.~~
- 4) Operations will be performed within the authorization basis levels.
- 5) All RCRA material (except the T-Hopper contents) will be re-characterized as low level waste (non-RCRA).
- 6) The UWD Project will, as described in this document, disposition rejected product from the NMD Project.

R1-  
D-  
540

- 7) T-Hopper contents will be treated offsite by an approved facility.
- 8) Quantities based upon December 1, 2000 waste inventory.
- 9) Sealed source characterization performed at the Department Of Energy Mound facility for Am<sup>241</sup> will be utilized to characterize the FEMP population of sealed sources.
- 10) The fissile metal population currently classified as waste will be re-classified as product material.
- 11) NFS will accept and can process the fissile metals for re-introduction into the fuel cycle.
- 12) If a metal fire occurs during the routine handling (packaging/processing) of potentially pyrophoric material or other reactive metal, the UWD Project will manage the fire per project plans and work instructions and will not impose a stand-down of operations.
- 13) Decant rate is 12 drums per day.
- 14) No size reduction of fissile metal is required for shipment to NFS.
- 15) Work performed by NFS in relation to the fissile metals will be under a subcontract and not home office support.
- 16) DOT will grant shipping exceptions for material that does not fall within the Certificate of Compliance. This is expected to be a small amount of enriched metal. Based on discussions with Shipping Services, pursuing exceptions would be preferable, both cost and schedule-wise, to pursuing certification of new containers.

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D-  
534

#### 1.2.2 Exclusions

- 1) Operations Assurance manpower to perform Standard Startup Reviews (SSRs) is excluded.
- 2) Manpower to deliver Personal Protective Equipment (PPE) and manage the Satellite Change Areas is excluded.
- 3) Building maintenance is excluded. Covered by Infrastructure Services.



### 1.2.3 Government-Furnished Equipment/Services

- R1-  
D-  
534
- 1) DOE provides approved Certificates of Compliance for packaging and shipment of the various metal payloads by January 31, 2001.
  - 2) DOE Fernald receives authority to make waste declarations based upon the screening plan.
  - 3) DOE HQ approves DOE Fernald authority to make waste declaration of rejected product that does not meet the UMD criteria by October 1, 2001. This population includes materials that have been or are currently wet, that have impurities, or contain scrap material.
  - ~~4) DOT will grant shipping exceptions for fissile material that does not fall within the Certificate of Compliance.~~
  - 5) Nevada Test Site (NTS) remains open, approves the NTS Waste Profile and accepts the waste per the approved profile.
  - 6) The FEMP will enter into an agreement with the UMD for UMD to take ownership of the fissile metals to be transferred to Nuclear Fuel Services, Inc. (NFS) for storage/processing.
  - 7) The UMD will take ownership of materials transferred to NFS.

### 1.3 DRIVERS

- R1-  
D-  
540
- ~~1) Manpower is available to execute the project.~~
  - 2) DOE letter number DOE-0782-99 commitment to remove nuclear waste from site by December 30, 2005.
  - ~~3) The project requires the use of Building 80 through the fourth quarter of FY 03 and Buildings 56A, 30A, 71 and 77 through the third quarter of FY 04.~~
  - ~~4) The Silo 3 treatment facility is constructed and operational prior to receiving fissile compounds for soil blend down.~~

### 1.4 PROJECT PHYSICAL DESCRIPTION

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002

The materials managed under control account JUWP consist of 1,595 containers of fissile excepted and depleted metal, 594 containers of fissile metal, 4,031 containers of fissile excepted and < 1% U<sup>235</sup> compounds, 2,289 containers of fissile compounds, and 388 containers of RCRA compounds of various enrichments, two RCRA T-Hoppers and 624 sealed sources. (See attached spreadsheet, Exhibit 3 and Exhibit 4.)

This material will require characterization for disposal and waste profiles for the disposal facilities will be generated. This work is covered in JNMSA.

Project execution will take place in either Building 80, 56A, or 71. Repackaged material will be transferred to Building 30A for shipment preparation. Building 77 will be used for storage of new drums, for interim storage of completed packages, and for labeling for shipment (overflow storage). The project requires the use of Building 80 through the fourth quarter of FY-03 and Buildings 56A, 30A, 71 and 77 through the third quarter of FY-04.

The fissile excepted and  $\leq 1\%$   $U^{235}$  compounds will be packaged for shipment to NTS by Low Level waste personnel in conjunction with a large inventory of similar material that they are targeting for shipment by the end of FY01.

The fissile metals require repackaging into quantities of 350 grams or less of  $U^{235}$  per drum for transport to NFS for processing.

The fissile compounds require down blending with soil through the Silo 3 treatment facility for disposal at Envirocare of Utah, Inc.

The fissile excepted and depleted metals require repackaging into DOT approved shipping containers for transport to the NTS for disposal.

The  $> 1\%$   $U^{235}$  RCRA compounds (once re-characterized as non-RCRA) require down blending with soil through the Silo 3 treatment facility for disposal at Envirocare of Utah, Inc.

The  $< 1\%$   $U^{235}$  RCRA compounds (once re-characterized as non-RCRA) will require packaging for shipment off-site to NTS for disposal.

The RCRA T-Hopper contents require packaging and treatment prior to disposal.

The sealed sources require packaging prior to off-site disposal. On June 13, 2000, DOE-FEMP requested assistance from the Nonactinide Isotopes and Sealed Sources Management Group (NISSMG) in the disposition planning for sealed sources and standards in inventory at the FEMP. The NISSMG is one of three material evaluation teams in the Nuclear Material Integration Project (NMI), a DOE-EM chartered program. The NISS team was assigned responsibility to evaluate all radioactive isotopes with an atomic number less than 90, and all sources, samples, and standards irrespective of atomic number. A number of other radionuclides of elements with atomic number 90 or greater were also evaluated as NISS materials because: 1) they are not part of the Nuclear Materials Management and Safeguards System (NMMSS), 2) they are sealed sources, 3) they are neutron sources, or 4) they are located at small or closure sites (such as Fernald).

Preparation for the packaging/repackaging will entail the material to be located and removed from inventory, vented and decanted, if necessary, and transported to either Building 80, 56A, or 71. Decant water will be collected and transported to the Advanced Waste Water Treatment Plant for treatment. All containers will be inspected for prohibited items, however the project does not expect to find prohibited items in these containers since this inventory was originally slated to be reintroduced as feedstock into the process. The packages will then be moved to Building 30A where they will be labeled and combined into distinct shipments preparatory for shipment to NTS or off-site treatment facility.

## 1.5 PROJECT PLAN/TECHNICAL SCOPE AND QUANTIFICATION PLAN

### 1.5.1 JUWPA - Fissile Excepted and $\leq 1\%$ $U^{235}$ Compounds

The Low Level Waste project will provide the manpower to process and package the fissile excepted and  $\leq 1\%$   $U^{235}$  compounds for shipment to NTS. The UWD project will budget for the manpower and materials to complete this scope of work.

#### 1) Task #1 - Planning

Planning for fissile excepted and  $\leq 1\%$   $U^{235}$  compounds disposition includes: assuring all work can be and is performed in the safest manner; identifying the specific containers associated with each waste stream; preparing task orders for pulling the containers from inventory, visually inspecting the containers, decanting the containers if necessary, transporting the containers to the packaging area, packaging, and preparing the final package for shipment; and performing management assessments of work processes and equipment.

#### 2) Task #2 - Characterization

Characterization of this waste (4,031 containers) must be completed prior to shipment for disposal at NTS. Characterization will be an ongoing, iterative process performed in conjunction with the visual inspection process. In order to complete the characterization process, a visual inspection of the waste will be performed by waste characterization field personnel during the processing stage discussed below in Task 3. A digital photograph of the drum contents will be taken during this visual inspection process. The photograph will be downloaded into SWIFTS to assist in the characterization verification process. A written visual inspection form will also be completed that will become part of the permanent characterization file.

3) Task #3 - Processing

3.1) Subtask #1 – Reject Miscellaneous Depleted UF<sub>4</sub> Processing

3.1)1 Plan/Scope – Reject Miscellaneous Depleted UF<sub>4</sub> Processing

Low Level Waste personnel will, per approved task order inventory request, locate and transport the 45 containers of miscellaneous depleted UF<sub>4</sub> to Building 71 for packaging. These containers have been verified dry by the NMD project and no processing is required.

3.2) Subtask #2 - Reject Normal Compounds Processing

3.2)1 Plan/Scope - Reject Normal Compounds Processing

Low Level Waste personnel will, per approved task order inventory request, locate and transport the 31 containers of reject normal compounds to Building 71 for processing. Processing required for the compound streams includes visual inspection to verify no prohibited items and no free liquid, and decanting. All 31 containers of reject normal compounds require decanting. The assumed decant rate is 12 containers per day. At Building 71, LLW personnel will place the containers into a HEPA booth where they will be opened and inspected to determine if the contents contain any prohibited items.

3.3) Subtask #3 - Depleted Compounds/Trash Processing

3.3)1 Plan/Scope - Depleted Compounds/Trash Processing

Low Level Waste personnel will, per approved task order inventory request, locate and transport the 108 containers of depleted compounds/trash to Building 71 for processing. Processing required for the compound streams includes visual inspection to verify no prohibited items and no free liquid, and decanting, if necessary. It has been assumed that one-third of the containers (36) require decanting. At Building 71, LLW personnel will place the containers into a HEPA booth where they will be opened and inspected to determine if the contents are dry and free of prohibited items. Any containers requiring decanting will be decanted in Building 71, per approved task order inventory request. The assumed decant rate is 12 containers per day.

3.4) Subtask #4 -  $\leq 1\%$  U<sup>235</sup> Enriched Compounds Processing

3.4)1 Plan/Scope -  $\leq 1\%$  U<sup>235</sup> Enriched Compounds Processing

Low Level Waste personnel will, per approved task order inventory request, locate and transport the 3,261 containers of  $\leq 1\%$  U<sup>235</sup> enriched compounds to Building 71 for processing. Processing required for the compound streams includes visual inspection to verify no prohibited items and no free liquid, and decanting, if necessary. It has been assumed that one-third of the containers (1,087) require decanting. At Building 71, LLW

personnel will place the containers into a HEPA booth where they will be opened and inspected to determine if the contents are dry and free of prohibited items. Any containers requiring decanting will be decanted in Building 71, per approved task order inventory request. The assumed decant rate is 12 containers per day.

3.5) Subtask #5 - Reject  $\leq 1\%$   $U^{235}$   $U_3O_8$  Processing

3.5)1 Plan/Scope - Reject  $\leq 1\%$   $U^{235}$   $U_3O_8$  Processing

Low Level Waste personnel will, per approved task order inventory request, locate and transport the 530 containers of reject  $\leq 1\%$   $U^{235}$   $U_3O_8$  to Building 71 for processing. Processing required for the compound streams includes visual inspection to verify no prohibited items and no free liquid, and decanting, if necessary. It has been assumed that one-third of the containers (177) require decanting. At Building 71, LLW personnel will place the containers into a HEPA booth where they will be opened and inspected to determine if the contents are dry and free of prohibited items. Any containers requiring decanting will be decanted in Building 71, per approved task order inventory request. The assumed decant rate is 12 containers per day.

3.6) Subtask #6 - Reject  $\leq 1\%$   $U^{235}$  Miscellaneous Compounds Processing

3.6)1 Plan/Scope - Reject  $\leq 1\%$   $U^{235}$  Miscellaneous Compounds Processing

Low Level Waste personnel will, per approved task order inventory request, locate and transport the 41 containers of reject  $\leq 1\%$   $U^{235}$  miscellaneous compounds to Building 71 for processing. Processing required for the compound streams includes visual inspection to verify no prohibited items and no free liquid, and decanting, if necessary. It has been assumed that one-third of the containers (14) require decanting. At Building 71, LLW personnel will place the containers into a HEPA booth where they will be opened and inspected to determine if the contents are dry and free of prohibited items. Any containers requiring decanting will be decanted in Building 71, per approved task order inventory request. The assumed decant rate is 12 containers per day.

3.7) Subtask #7 -  $> 1\%$   $U^{235}$  Enriched Fissile Excepted Compounds Processing

3.7)1 Plan/Scope -  $> 1\%$   $U^{235}$  Enriched Fissile Excepted Compounds Processing

Low Level Waste personnel will, per approved task order inventory request, locate and transport the 15 containers of  $> 1\%$   $U^{235}$  enriched fissile excepted compounds to Building 71 for processing. Processing required for the compound streams includes visual inspection to verify no prohibited items and no free liquid, and decanting, if necessary. It has been assumed that one-third of the containers (5) require decanting. At Building 71, LLW personnel will place the containers into a HEPA booth where they will be opened and inspected to determine if the contents are dry and free of prohibited items. Any

containers requiring decanting will be decanted in Building 71, per approved task order inventory request. The assumed decant rate is 12 containers per day.

3.8) Task #3 Quantification - Fissile Excepted and  $\leq 1\%$  U<sup>235</sup> Compounds Processing

The processing of the fissile excepted and  $\leq 1\%$  U<sup>235</sup> compounds will be done during the packaging (Task #4 below) performed by LLW personnel. The quantification for the processing is captured in the packaging quantification sections.

4) Task #4 - Packaging

4.1) Subtask #1 - Miscellaneous Depleted UF<sub>4</sub> Packaging

4.1)1 Plan/Scope - Miscellaneous Depleted UF<sub>4</sub> Packaging

At Building 71, LLW personnel per approved task order will place all 28 containers of this material into an International Shipping Organization (ISO) container. The ISO container will be transferred to the Plant 1 Pad for labeling and preparation for shipping.

4.1)2 Quantification - Miscellaneous Depleted UF<sub>4</sub> Packaging

Classification	Average FTE	Duration (Quarters)	Total Man-Hours
Hazwat	2.0	1	874
MVO	1.0	1	437
MC&A	0.3	1	131
QC	0.3	1	131
Rad Tech	0.3	1	131
Supervisor	0.4	1	174
Total Man-Hours:			1,878
ODC (@\$0.298/mh)			\$560

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4.2) Subtask #2 - Reject Normal Compounds Packaging

4.2)1 Plan/Scope - Reject Normal Compounds Packaging

At Building 71, LLW personnel per approved task order will place all 31 containers of this material into an ISO container. The ISO container will be transferred to the Plant 1 Pad for labeling and preparation for shipping.

#### 4.2)2 Quantification - Reject Normal Compounds Packaging

Classification	Average FTE	Total Man-Hours
Hazwat	3.0	150
MVO	1.0	50
MC&A	0.2	25
Rad Tech	0.4	25
Supervisor	0.4	25
Total Man-Hours:		275
ODC (@\$0.298/mh)		\$82

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#### 4.3) Subtask #3 - Depleted Compounds/Trash Packaging

##### 4.3)1 Plan/Scope - Depleted Compounds/Trash Packaging

At Building 71, LLW personnel per approved task order will place 30 containers of this material into an ISO container. The 108 containers of depleted compounds/trash will generate approximately four ISO containers. The ISO containers will be transferred to the Plant 1 Pad for labeling and preparation for shipping.

##### 4.3)2 Quantification - Depleted Compounds/Trash Packaging

Classification	Average FTE	Total Man-Hours
Hazwat	2.0	1,404
MVO	0.6	455
HFO	0.2	88
MC&A	0.2	31
Rad Tech	0.3	206
Supervisor	0.2	163
Total Man-Hours:		2,347
ODC (@\$0.298/mh)		\$699

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#### 4.4) Subtask #4 - $\leq 1\%$ $U^{235}$ Enriched Compounds Packaging

##### 4.4)1 Plan/Scope - $\leq 1\%$ $U^{235}$ Enriched Compounds Packaging

At Building 71, LLW personnel per approved task order will place 30 containers of this material into an ISO container. The 3,261 containers of  $\leq 1\%$   $U^{235}$  enriched compounds will generate approximately 109 ISO containers. The ISO containers will be transferred to Plant 1 Pad for labeling and preparation for shipping.

4.4)2 Quantification -  $\leq 1\%$   $U^{235}$  Enriched Compounds Packaging

R1- F08- 002	Classification	Average FTE	Total Man-Hours
	Hazwat	4.0	2,377
	MVO	2.0	1,068
	MC&A	0.5	250
	QC	0.2	88
	Rad Tech	1.0	511
	HEO	0.3	131
	Supervisor	1.0	511
	Total Man-Hours:		4,936
	ODC (@\$0.298/mh)		\$1,471

4.5) Subtask #5 - Reject  $\leq 1\%$   $U^{235}$   $U_3O_8$  Packaging

4.5)1 Plan/Scope - Reject  $\leq 1\%$   $U^{235}$   $U_3O_8$  Packaging

At Building 71, LLW personnel per approved task order will place 30 containers of this material into an ISO container. The 530 containers of reject  $\leq 1\%$   $U^{235}$   $U_3O_8$  will generate approximately 18 ISO containers. The ISO containers will be transferred to the Plant 1 Pad for labeling and preparation for shipping.

4.5)2 Quantification - Reject  $\leq 1\%$   $U^{235}$   $U_3O_8$  Packaging

Classification	Average FTE	Duration (Quarters)	Total Man-Hours
Hazwat	1.0	1	437
MVO	0.6	1	262
MC&A	0.2	1	88
HEO	0.2	1	88
Rad Tech	0.6	1	262
Supervisor	0.2	1	88
Total Man-Hours:			1,224
ODC (@\$0.298/mh)			\$364

4.6) Subtask #6 - Reject  $\leq 1\%$   $U^{235}$  Miscellaneous Compounds Packaging

4.6)1 Plan/Scope - Reject  $\leq 1\%$   $U^{235}$  Miscellaneous Compounds Packaging

At Building 71, LLW personnel per approved task order will place 30 containers of this material into an ISO container. The 41 containers of reject  $\leq 1\%$   $U^{235}$  miscellaneous



compounds will generate approximately two ISO containers. The ISO containers will be transferred to Plant 1 Pad for labeling and preparation for shipping.

4.6)2 Quantification - Reject  $\leq 1\%$   $U^{235}$  Miscellaneous Compounds Packaging

Classification	Average FTE	Duration (Quarters)	Total Man-Hours
Hazwat	0.6	1	262
MVO	0.2	1	88
QC	0.2	1	88
Rad Tech	0.2	1	88
Supervisor	0.2	1	88
Total Man-Hours:			614
ODC (@\$0.298/mh)			\$183

4.7) Subtask #7 -  $> 1\%$   $U^{235}$  Enriched Fissile Excepted Compounds Packaging

4.7)1 Plan/Scope -  $> 1\%$   $U^{235}$  Enriched Fissile Excepted Compounds Packaging

At Building 71, LLW personnel per approved task order will place all of the containers of this material into an ISO container. The 15 containers of  $> 1\%$   $U^{235}$  enriched fissile excepted compounds will fill approximately one-half of an ISO container. The ISO container, after being filled with other LLW, will be transferred to the Plant 1 Pad for labeling and preparation for shipping.

4.7)2 Quantification -  $> 1\%$   $U^{235}$  Enriched Fissile Excepted Compounds Packaging

Classification	Average FTE	Duration (Quarters)	Total Man-Hours
Hazwat	0.2	1	88
MVO	0.2	1	88
Rad Tech	0.2	1	88
Supervisor	0.2	1	88
Total Man-Hours:			352
ODC (@\$0.298/mh)			\$105

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5) Task #5 - Fissile Excepted and  $\leq 1\%$   $U^{235}$  Compounds Shipping

5.1)1 Plan/Scope - Fissile Excepted and  $\leq 1\%$   $U^{235}$  Compounds Shipping

Approximately 1,700 of the 4,031 containers in this category fall below the 0.9 %  $U^{235}$  required by the draft profile to be submitted to NTS for approval. Once that profile is approved and shipments begin, the profile will be amended to include the remainder of the inventory (2,331 containers) that are above the 0.9%  $U^{235}$ .

The initial 1,700 containers will be shipped during the fourth quarter of FY-01 and the remainder (2,331 containers) during the first, second and third quarters of FY-02.

Shipments will be assembled on the Plant 1 Pad for NTS and the proper documentation will be completed. Each shipment will contain a minimum of one ISO container or a maximum of two, not to exceed 40,000 pounds net trailer weight. The ISO containers will be loaded onto trailers and secured by Transportation Laborers. Shipping Services will be responsible for acquiring transport and overseeing DOT compliance issues.

Shipment Quantities - Fissile Excepted and  $\leq 1\%$   $U^{235}$  Compounds

Waste Stream	Shippable Containers	Shipments
Miscellaneous depleted $UF_4$	2	2
Reject normal compounds	1	1
Depleted compounds & trash	4	4
$\leq 1\%$ $U^{235}$ enriched compounds	109	109
Reject $\leq 1\%$ $U^{235}$ $U_3O_8$	18	18
Reject miscellaneous compounds	1	1
$> 1\%$ $U^{235}$ enriched fissile excepted	1	1

5.1)2 Quantification - Fissile Excepted and  $\leq 1\%$   $U^{235}$  Compounds Shipping

Classification	Average FTE	Total Man-Hours
Hazwat	2.0	2,107
MVO	2.0	2,107
MC&A	0.3	263
Whs. Attend.	0.5	527
Rad Tech	1.0	1,054
QC	1.0	1,054
Trans labor	1.0	1,054
Supervisor	1.0	1,054
	<b>Total Man-Hours:</b>	<b>9,220</b>
	<b>ODC (@\$0.298/mh)</b>	<b>\$2,747</b>

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## 1.5.2 JUWPB - Fissile Excepted and Depleted Metal

### 1) Task #1 - Planning

Planning for fissile excepted and depleted metals disposition includes: assuring all work can be and is performed in the safest manner; identifying the specific containers associated with each waste stream; preparing task orders for pulling the containers from inventory, visually inspecting the containers, venting/decanting the containers if necessary, transporting containers to the packaging area, packaging, and preparing the final package for shipment; and performing management assessments of work processes and equipment.

### 2) Task #2 - Characterization

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Characterization of this waste (1,595 containers) must be completed prior to shipment for disposal at NTS. Characterization will be an ongoing, iterative process performed in conjunction with the visual inspection process. In order to complete the characterization process, a visual inspection of the waste will be performed by waste characterization field personnel during the processing stage discussed below in Task 3. A digital photograph of the drum contents will be taken during this visual inspection process. The photograph will be downloaded into SWIFTS to assist in the characterization verification process. A written visual inspection form will also be completed that will become part of the permanent characterization file.

### 3) Task #3 - Processing

Processing required for the metal streams includes visual inspection to verify no prohibited items and no free liquid are present, venting, and decanting if necessary. Due to concerns over potential generation of hydrogen gas and pyrophoricity of uranium metal, guidelines and procedures have been implemented to assure that all containers of uranium metal are tested for the presence of flammable gas, are vented, and are decanted if water is present. Plant 1 Pad/Storage personnel will perform these functions on the containers prior to delivering the containers to UWD for packaging.

#### 3.1) Subtask #1 - Depleted Metal Processing

##### 3.1)1 Plan/Scope - Depleted Metal Processing

This category consists of 1,337 containers of depleted metal. Plant 1 Pad/Storage personnel will, per approved task order inventory request, locate containers, monitor containers for less than 10% Lower Explosive Limit (LEL) of hydrogen, open containers for visual inspection, vent/decant containers if necessary, and transport containers to Building 80. It has been assumed that 25% (334 containers) will require decanting. The assumed decant rate is 12 containers per day.

### 3.2) Subtask #2 - Depleted Ingots and Derbies (potentially pyrophoric) Processing

#### 3.2)1 Plan/Scope - Depleted Ingots and Derbies Processing

This category consists of five ingots and 196 derbies (potentially pyrophoric). Plant 1 Pad/Storage personnel will, per approved task order inventory request, locate containers, monitor containers for less than 10% Lower Explosive Limit (LEL) of hydrogen. The containers will then be moved to Building 80. The depleted ingots and derbies do not require decanting. Visual inspections of this waste stream have already been completed.

### 3.3) Subtask #3 - Enriched Fissile Excepted Metals Processing

#### 3.3)1 Plan/Scope - Enriched Fissile Excepted Metals Processing

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This category consists of 2 containers of enriched fissile excepted metals. Plant 1 Pad/Storage personnel will, per approved task order inventory request, locate containers, monitor containers for less than 10% Lower Explosive Limit (LEL) of hydrogen, open containers for visual inspection, vent/decant containers if necessary, and transport containers to Building 80. The assumption is that one-third of the containers (53) will require decanting. The assumed decant rate is 12 containers per day.

### 3.4) Subtask #4 - Reject Normal Metal Processing

#### 3.4)1 Plan/Scope - Reject Normal Metal Processing

This category consists of 34 containers of reject normal metal. Plant 1 Pad/Storage personnel will, per approved task order inventory request, locate containers, monitor containers for less than 10% Lower Explosive Limit (LEL) of hydrogen, open containers for visual inspection, vent/decant containers if necessary, and transport containers to Building 80. The containers of reject metal, listed above from the NMD Project, will be decanted before being transferred to the UWD Project. The assumption is that one-third of the containers (12) will require decanting. The assumed decant rate is 12 containers per day.

### 3.5) Subtask #5 - Reject Miscellaneous Depleted Metal Processing

#### 3.5)1 Plan/Scope - Reject Miscellaneous Depleted Metal Processing

This category consists of 20 containers of reject miscellaneous depleted metal. Plant 1 Pad/Storage personnel will, per approved task order inventory request, locate containers, monitor containers for less than 10% Lower Explosive Limit (LEL) of hydrogen, open containers for visual inspection, vent/decant containers if necessary, and transport containers to Building 80. The containers of reject metal, listed above from the NMD Project, will be decanted before being transferred to the UWD Project.

### 3.6) Task #3 Quantification - Fissile Excepted and Depleted Metal Processing

#### Decant Crew

Classification	Average FTE	Duration (Quarters)	Total Man-Hours
Hazwat	1.5	2	1,311
MVO	0.5	2	437
Rad Tech	0.5	2	437
IH	0.5	2	437
Supervisor	0.5	2	437
Total Man-Hours:			3,059
ODC (@\$0.298/mh)			\$912

#### Movement Crew

Classification	Average FTE	Duration (Quarters)	Total Man-Hours
Hazwat	2.0	3	2,621
MVO	2.0	3	2,621
MC&A	0.5	3	655
IH	0.5	3	655
Rad Tech	1.0	3	1,310
Supervisor	0.5	3	655
Total Man-Hours:			8,517
ODC (@\$0.298/mh)			\$2,538

### 4) Task #4 - Packaging

#### 4.1) Subtask #1 - Depleted Metal Packaging

##### 4.1)1 Plan/Scope - Depleted Metal Packaging

At Building 80, each of the 1,337 drums of metal will have four pounds of absorbent material placed in the annular space between inner drums and any void space will be filled with vermiculite. Two absorbent pads will be placed in the bottom of a TOC type box and six drums of metal will be loaded into the TOC. The boxes will be transported to Building 30A.

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#### 4.1)2 Quantification - Depleted Metal Packaging

Classification	Average FTE	Duration (Quarters)	Total Man-Hours
Hazwat	6.0	9.0	23,585
MVO	2.0	9.0	7,862
MC&A	0.5	9.0	1,965
QC	0.5	9.0	1,965
Rad Tech	1.0	9.0	3,931
Supervisor	1.0	9.0	1,965
Carpenter	2.8	8.5	10,395
Total Man-Hours:			41,273
ODC (@\$0.298/mh)			\$12,299

#### 4.2) Subtask #2 - Depleted Ingots and Derbies (potentially pyrophoric) Packaging

##### 4.2)1 Plan/Scope - Depleted Ingots and Derbies (potentially pyrophoric) Packaging

At Building 80, the five ingots and 196 derbies (potentially pyrophoric) will be removed from the ISOs and packaged into drums containing four pounds of absorbent material. Inert material (vermiculite) will be required to surround potentially pyrophoric material, totally filling any void space within the drum and between drums. Two absorbent pads will be placed into the bottom of a TOC type box, and up to six drums of metal will be loaded into the TOC. The boxes will be transported to Building 30A.

##### 4.2)2 Quantification - Depleted Ingots and Derbies (potentially pyrophoric) Packaging

Classification	Average FTE	Duration (Quarters)	Total Man-Hours
Hazwat	1.5	1	655
MVO	0.5	1	218
MC&A	0.1	1	44
QC	0.1	1	44
Rad Tech	0.4	1	175
Supervisor	0.2	1	87
Total Man-Hours:			1,223
ODC (@\$0.298/mh)			\$364

#### 4.3) Subtask #3 - Enriched Fissile Excepted Metals Packaging

##### 4.3)1 Plan/Scope - Enriched Fissile Excepted Metals Packaging

At Building 80, each of the 2 drums of metal will have four pounds of absorbent material placed in the annular space between inner drums and any void space will be filled with

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vermiculite. Two absorbent pads will be placed in the bottom of a TOC type box and six drums of metal will be loaded into the TOC. The boxes will be transported to Building 30A.

#### 4.3)2 Quantification - Enriched Fissile Excepted Metals Packaging

Classification	Average FTE	Duration (Quarters)	Total Man-Hours
Hazwat	1.5	1	655
MVO	0.5	1	218
MC&A	0.1	1	44
QC	0.1	1	44
Rad Tech	0.4	1	175
Supervisor	0.1	1	44
Total Man-Hours:			1,180
ODC (@\$0.298/mh)			\$352

#### 4.4) Subtask #4 - Reject Normal Metal Packaging

##### 4.4)1 Plan/Scope - Reject Normal Metal Packaging

At Building 80, each of the 34 drums of metal will have four pounds of absorbent material placed in the annular space between inner drums and any void space will be filled with vermiculite. Two absorbent pads will be placed in the bottom of a TOC type box and six drums of metal will be loaded into the TOC. The boxes will be transported to Building 30A.

#### 4.4)2 Quantification - Reject Normal Metal Packaging

Classification	Average FTE	Duration (Quarters)	Total Man-Hours
Hazwat	1.5	1	655
MVO	0.5	1	218
MC&A	0.1	1	44
QC	0.1	1	44
Rad Tech	0.4	1	175
Supervisor	0.2	1	87
Total Man-Hours:			1,223
ODC (@\$0.298/mh)			\$364

4.5) Subtask #5 - Reject Miscellaneous Depleted Metal Packaging

4.5)1 Plan/Scope - Reject Miscellaneous Depleted Metal Packaging

At Building 80 each of the 20 drums of metal will have four pounds of absorbent material placed in the annular space between inner drums and any void space will be filled with vermiculite. Two absorbent pads will be placed in the bottom of a TOC type box and six drums of metal will be loaded into the TOC. The boxes will be transported to Building 30A.

4.5)2 Quantification - Reject Miscellaneous Depleted Metal Packaging

Classification	Average FTE	Duration (Quarters)	Total Man-Hours
Hazwat	1.5	1	655
MVO	0.5	1	218
MC&A	0.1	1	44
QC	0.1	1	44
Rad Tech	0.3	1	131
Carpenters	4.0	1	1,747
Supervisor	0.2	1	87
Total Man-Hours:			1,179
ODC (@\$0.298/mh)			\$351

5) Task #5 - Fissile Excepted and Depleted Metal Shipping

5.1) Subtask #1 - Fissile Excepted and Depleted Metal Shipping

5.1)1 Plan/Scope - Fissile Excepted and Depleted Metal Shipping

At Building 30A, shipments will be assembled for NTS and the proper documentation will be completed. Each shipment will contain a minimum of four TOC type boxes not to exceed 40,000 pounds net trailer weight. The boxes will be loaded onto trailers and secured by Transportation Laborers. Shipping Services will be responsible for acquiring transport and overseeing DOT compliance issues.

Shipment Quantities - Fissile Excepted and Depleted Metal

Waste Stream	Shippable Containers	Shipments
Depleted metal	223	56
Depleted ingots & derbies	17	5
Enriched metal fissile excepted	27	6
Reject normal metal	6	2
Reject misc depleted metal	4	1



### 5.1)2 Quantification - Fissile Excepted and Depleted Metal Shipping/Loading Crew

Classification	Average FTE	Total Man-Hours
Hazwat	4.0	5,584
MVO	4.0	5,584
MC&A	0.5	698
Whse. Attend.	1.0	1,398
Rad Tech	2.0	2,792
QC engineer	2.0	2,792
Trans labor	2.0	2,792
Supervisor	2.0	2,792
	<b>Total Man-Hours:</b>	<b>24,432</b>
	<b>ODC (@\$0.298/mh)</b>	<b>\$7,281</b>

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### 1.5.3 JUWPC - RCRA Compounds, T-Hoppers and Sealed Sources

#### 1) Task #1 - Planning

Planning for disposition of this waste stream includes: assuring all work can be and is performed in the safest manner; identifying the specific containers associated with each waste stream; preparing task orders for pulling the containers from inventory, visually inspecting the containers, decanting the containers if necessary, transporting the containers to the packaging/processing area, packaging, and preparing the final package for shipment; and performing management assessments of work processes and equipment to assure readiness for operation.

#### 2) Task #2 - Characterization

Characterization of this waste must be completed prior to shipment. Characterization will be an ongoing, iterative process performed in conjunction with the visual inspection process. Additional sampling and analysis may be required to complete the characterization of the RCRA compounds and T-Hoppers. It is assumed that approximately 150 samples will be required to properly characterize these streams. It is assumed that all the RCRA material will be re-classified as non-RCRA. In addition to sampling and analysis, a visual inspection of the waste will be performed by waste characterization field personnel during the processing stage discussed below in Task 3. A digital photograph of the drum contents will be taken during this visual inspection process. The photograph will be downloaded into SWIFTS to assist in the characterization verification process. A written visual inspection form will also be completed that will become part of the permanent characterization file.

Characterization of the > 1% U<sup>235</sup> RCRA compounds consists of collection and evaluation of material information for processing and preparation of Envirocare of Utah, Inc. waste profile amendment.

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Classification	Average FTE	Duration (Quarters)	Total Man-Hours
Hazwat	2	2	1,747
MVO	1	2	873
Env science tech	0.25	2	250
Rad Tech	4	2	873
Supervisor	1	2	873
Total Man-Hours:			3,743
ODC (@\$0.298/mh)			\$1,115

Past sampling on the T-Hoppers indicate they are hazardous for TCLP metals and one T-Hopper is considered to have concentrations of transuranic nuclide concentrations in excess of 100 nCi/g. Both T-Hoppers require treatment for TCLP metals and one requires treatment for transuranic nuclide presence.

It is assumed that sealed source characterization for Am<sup>241</sup> performed at the Department of Energy Mound facility can be utilized to characterize the FEMP population of sealed sources.

### 3) Task #3 - Processing

#### 3.1) Subtask #1 - >1% U<sup>235</sup> RCRA Compounds Processing

##### 3.1)1 Plan/Scope - >1% U<sup>235</sup> RCRA Compounds Processing

Plant 1 Pad/Storage personnel will, per approved task order inventory request, locate and transport the containers to Building 56A for processing. Processing required for the >1% U<sup>235</sup> RCRA compounds includes visual inspection to verify no prohibited items and material pedigree. At Building 56A, UWD personnel will open the 132 containers of >1% U<sup>235</sup> RCRA compounds drums in a HEPA enclosure and inspect the material to ensure it is free of prohibited items and verify the contents per process knowledge. The containers will be returned to storage awaiting process through the WPRAP blending facility.

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Plant 1 Pad/Storage personnel will transport the containers to the WPRAP blending facility. The WPRAP blending facility will be designed to accommodate this stream for a soil blend-down operation to achieve a homogeneous mixture at less than 0.5 mg/L of U<sup>235</sup>. The treatment facility will incorporate drum handling equipment and bulk material feeder that will feed a mixer. The drums will be opened to access the contents and the contents will be introduced into the mixer. The drums themselves will be size reduced and become part

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of the waste stream as debris. The mixer will be utilized to mix the soil and compounds to the prescribed concentration of  $U^{235}$ . Throughput of the WPRAP blending facility is assumed to be 10 drums per day with two shift operation. The blended down  $> 1\% U^{235}$  RCRA compounds (previously re-characterized as non-RCRA) will be then be handled under the normal WPRAP procedures for pit materials for waste handling, loading, and shipment.

### 3.2) Subtask #2 - $< 1\% U^{235}$ RCRA Compounds Processing

#### 3.2)1 Plan/Scope - $< 1\% U^{235}$ RCRA Compounds Processing

Low Level Waste personnel will, per approved task order inventory request, locate and transport the containers to Building 71 for processing. Processing required for the  $< 1\% U^{235}$  RCRA (previously re-characterized as non-RCRA) compounds stream includes a visual inspection to verify no prohibited items and no free liquids, and decanting if necessary. At Building 71, LLW personnel will open the 256 containers of  $< 1\% U^{235}$  RCRA compounds drums in a HEPA enclosure and inspect the material to ensure it is dry and free of prohibited items. Any containers requiring decanting will be decanted in Building 71, per approved task order inventory request. It has been assumed that one-third of the 256 (86) containers require decanting. The assumed decant rate is 12 containers per day.

### 3.3) Subtask #3 - RCRA T-Hoppers Processing

#### 3.3)1 Plan/Scope - RCRA T-Hoppers Processing

Plant 1 Pad/Storage personnel will, per approved task order inventory request, locate and transport the T-Hoppers to Building 56A for processing. The contents of both T-Hoppers will require processing (treatment for TCLP metals content) and one will require treatment to reduce transuranic concentration. Some form of stabilization will be required to treat the TCLP metals. At this time it is assumed that the contents of the T-Hoppers (heel) will be removed and packaged into drums for off-site treatment and subsequent off-site disposal. This work will be performed in Building 56A in a HEPA enclosure.

### 3.4) Subtask #4 - Sealed Sources Processing

#### 3.4)1 Plan/Scope - Sealed Sources Processing

The FEMP has 624 sealed sources that require packaging for off-site shipment or disposal. Plant 1 Pad/Storage personnel will, per approved task order inventory request, locate and transport the sources to Building 80 for processing. Processing includes a visual inspection of the sources prior to packaging for off-site shipment.

### 3.5) Task #3 Quantification - RCRA T-Hoppers and Sealed Sources Processing

The processing costs for the processing of the T-Hoppers and Sealed Sources are covered in the manpower tables in Task #4, Packaging.

#### 4) Task #4 - Packaging

##### 4.1) Subtask #1 - > 1% U<sup>235</sup> RCRA Compounds Packaging

##### 4.1)1 Plan/Scope - > 1% U<sup>235</sup> RCRA Compounds Packaging

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The blended down > 1% U<sup>235</sup> RCRA compounds will be handled in accordance with the WPRAP operating procedures. The packaging of this blended down material consists of loading into gondola cars with other pit materials in the WPRAP facilities. This blended down waste stream will be part of the WPRAP profile for disposal at Envirocare of Utah, Inc through a profile amendment. The WPRAP Project will have control over when the gondola cars are loaded.

##### 4.1)2 Quantification - > 1% U<sup>235</sup> RCRA Compounds Packaging

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Classification	Average FTE	Duration (Quarters)	Total Man-Hours
Hazwat	1.5	1.0	655
MVO	0.5	1.0	218
HEO	0.5	1.0	218
Rad Tech	0.5	1.0	218
IH Tech	0.5	1.0	218
Supervisor	0.5	1.0	218
Total Man-Hours:			1,745
ODC (@\$0.298/mh)			\$520

##### 4.2) Subtask #2 - < 1% U<sup>235</sup> RCRA Compounds Packaging

##### 4.2)1 Plan/Scope - < 1% U<sup>235</sup> RCRA Compounds Packaging

At Building 71 the 256 drums of < 1% U<sup>235</sup> RCRA compounds (previously re-characterized as non-RCRA) will be packed into an ISO container. LLW personnel will place 30 containers of this waste stream into each ISO container, generating approximately 9 shippable containers. The ISO containers will be transported to the Plant 1 Pad for shipment.

#### 4.2)2 Quantification - <1% U<sup>235</sup> RCRA Compounds Packaging

Classification	Average FTE	Duration (Quarters)	Total Man-Hours
Hazwat	1.0	1	655
MVO	0.5	1	218
MC&A	0.1	1	44
Rad Tech	0.5	1	218
Supervisor	0.2	1	87
Total Man-Hours:			917
ODC (@\$0.298/mh)			\$273

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#### 4.3) Subtask #3 - T-Hoppers Packaging

##### 4.3)1 Plan/Scope - T-Hoppers Packaging

At Building 56A, the contents of the two T-Hoppers will be removed in a HEPA enclosure and packaged into 55-gallon drums for off-site shipment. The drums will be placed on pallets and secured for transport to Building 30A, where they will be staged for shipment.

##### 4.3)2 Quantification - T-Hoppers Packaging

Classification	Average FTE	Duration (Quarters)	Total Man-Hours
Hazwat	7.0	1.5	4,586
MVO	1.5	1.5	983
MC&A	0.5	1.5	328
QC	0.5	1.5	328
Rad Tech	1.0	1.5	655
Supervisor	0.5	1.5	327
Total Man-Hours:			7,207
ODC (@\$0.298/mh)			\$2,148

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#### 4.4) Subtask #4 - Sealed Sources Packaging

##### 4.4)1 Plan/Scope - Sealed Sources Packaging

At Building 80, the sealed sources will be packaged for off-site shipment for disposal or re-use/recycling. The sources will be packaged into approximately 20 drums for shipment to four different destinations (NTS, Waste Isolation Pilot Plant, US Ecology, and return to vendor). It is assumed that six shipments will be necessary to accomplish this work. The packaged sources will be placed on pallets and secured for transport to Building 30A, where they will be staged for shipment.

4.4)2 Quantification - Sealed Sources Packaging

Classification	Average FTE	Duration (Quarters)	Total Man-Hours
Hazwat	7.0	3.5	10,700
MVO	1.5	3.5	2,293
MC&A	0.5	3.5	764
QC	0.5	3.5	764
Rad Tech	1.0	3.5	1,529
Supervisor	0.5	3.5	764
Total Man-Hours:			16,814
ODC (@\$0.298/mh)			\$5,010

5) Task #5 - RCRA Compounds, RCRA T-Hoppers, Sealed Sources Shipping

5.1) Subtask #1 - > 1% U<sup>235</sup> RCRA Compounds Shipping

5.1)1 Plan/Scope - > 1% U<sup>235</sup> RCRA Compounds Shipping

The blended down > 1% U<sup>235</sup> RCRA compounds (previously re-characterized as non-RCRA) packaged into gondola cars at the WPRAP facility will be transported to Envirocare of Utah, Inc. by the WPRAP Project. The WPRAP has discretion on the scheduling for shipping this material.

5.1)2 Quantification - > 1% U<sup>235</sup> RCRA Compounds Shipping

The manpower to load and ship the blended down > 1% U<sup>235</sup> RCRA compounds will be provided by PBS 5.

5.2) Subtask #2 - < 1% U<sup>235</sup> RCRA Compounds Shipping

5.2)1 Plan/Scope - < 1% U<sup>235</sup> RCRA Compounds Shipping

Shipments will be assembled on the Plant 1 Pad for NTS and the proper documentation will be completed. Each shipment will contain a minimum of one ISO container or a maximum of two, not to exceed 40,000 pounds net trailer weight. The ISO containers will be loaded onto trailers and secured by Transportation Laborers. Shipping Services will be responsible for acquiring transport and overseeing DOT compliance issues.

5.2)2 Quantification - < 1% U<sup>235</sup> RCRA Compounds Shipping

The manpower to ship the < 1% U<sup>235</sup> RCRA compounds is covered under the shipping manpower under Charge Number JUWPA.

5.3) Subtask #3 - <1% U<sup>235</sup> RCRA Compounds, RCRA T-Hoppers and Sealed Sources Shipping

5.3)1 Plan/Scope - <1% U<sup>235</sup> RCRA Compounds, RCRA T-Hoppers and Sealed Sources Shipping

The drums and pallets will be transferred to Building 30A where the drums will be labeled and prepared for shipping. In Building 30A, shipments of packaged T-Hopper contents will be assembled for an off-site treatment facility and the proper documentation will be completed. The sealed sources will be assembled for shipment to their final destination. The pallets will be loaded onto trailers and secured by Transportation laborers. ISO containers will be prepared for shipping and loaded onto trailers and secured by Transportation laborers. Shipping Services will be responsible for acquiring transport and overseeing DOT compliance items.

5.3)2 Quantification - <1% U<sup>235</sup> RCRA Compounds, RCRA T-Hoppers and Sealed Sources Shipping

Shipment Quantities - <1% U<sup>235</sup> RCRA Compounds, T-Hoppers and Sealed Sources

Waste Stream	Shippable Containers	Shipments
<1% U <sup>235</sup> RCRA compounds	9	9
T-hoppers	2	2
Sealed Sources	20	6

Shipping/Loading Crew For T-Hoppers and Sealed Sources

Classification	Average FTE	Total Man-Hours
Hazwat	2.0	639
MVO	2.0	639
MC&A	0.2	86
Whse. Attend.	0.5	161
Rad Tech	1.0	320
QC engineer	1.0	320
Trans labor	1.0	320
Supervisor	1.0	320
	<b>Total Man-Hours:</b>	<b>2,805</b>
	<b>ODC (@\$0.298/mh)</b>	<b>\$836</b>

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1.5.4 JUWPD - Fissile Compounds

Management of the fissile compounds involves the UWD Project to perform the following activities:



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- Preparation of documentation to allow down blending of fissile compounds in the WPRAP blending facility.
- Inspection of drum contents
- Transfer of fissile compound drums to the WPRAP blending facility
- Provide technical interface with WPRAP personnel and the WPRAP contractor for functional requirements and formulations (blending mixes) to ensure blended material meets requirements
- Provide technical support for the development of transportation, WAC profile, and EPA documentation as well as procedures and operations documentation
- UO<sub>2</sub> material (134 drums of pellets) will be dispositioned through NFS (Section 1.5.5)

Management of the fissile compounds involves the WPRAP Project to perform the following activities:

- WPRAP will develop a waste acceptance criteria detailing the waste it will accept in the WPRAP blending process
- Provide Operations crews to operate the WPRAP blending facility while down blending the fissile compounds
- Development of documentation relating to the processing of the material (training, operating procedures, SOTs).
- Size-reduce solidified waste materials and dust collector bags.

#### 1) Task #1 - Planning

Planning for fissile compounds disposition includes: assuring all work can be and is performed in the safest manner; identifying the specific containers associated with each waste stream; preparing task orders for pulling the containers from inventory, transporting the containers to the WPRAP blending facility, down-blending the compounds with waste pit materials; and preparing the down-blended stream for shipment; and performing management assessments of work processes and equipment.

#### 2) Task #2 - Characterization

Characterization of this waste consists of collection and evaluation of material information for processing and preparation of Envirocare of Utah, Inc. waste profile amendment.

#### 3) Task #3 - Processing

Processing of this waste stream consists of a visual inspection of a portion of the inventory and transport of the containers to WPRAP blending facility for processing.

##### 3.1) Subtask #1 - > 1% U<sup>235</sup> Enriched Compounds Processing



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### 3.1)1 Plan/Scope - $>1\%$ $U^{235}$ Enriched Compounds Processing

Plant 1 Pad/Storage personnel will, per approved task order inventory request, locate and transport the 1,392 containers of this waste stream to Building 56A for visual inspection to ensure there are no prohibited items or liquids present and to verify the contents per process knowledge. If prohibited items or liquids are present, they will be removed prior to the containers being transferred to the WPRAP blending facility. After the visual inspection, the containers will be returned to storage, awaiting processing through the WPRAP blending facility.

Plant 1 Pad/Storage personnel will, per approved task order inventory request, locate and transport the 1,392 containers of  $>1\%$   $U^{235}$  enriched compounds to the WPRAP blending facility for processing. The WPRAP blending facility will be designed to accommodate this stream for a material blend-down operation to achieve a homogeneous mixture at less than 0.5 mg/L of  $U^{235}$  or an overall material Uranium 235 enrichment of less than 1%. The blending facility will incorporate drum handling equipment and bulk material feeder that will feed a mixer. The drums will be opened to access the contents and the contents will be introduced into the mixer. The drums themselves will be size reduced and become part of the waste stream as debris. The mixer will be utilized to mix the excavated and characterized pit material and compounds to the prescribed concentration of  $U^{235}$ . Throughput of the WPRAP blending facility is assumed to be 10 drums per day with one shift operation. The blended down compounds will then be handled under the normal WPRAP procedures for pit materials for waste handling, loading and shipment.

Water removed from the containers will be processed through the Advanced Waste Water Treatment Facility. Any prohibited objects will be disposed through the appropriate channels.

### 3.1)2 - $>1\%$ $U^{235}$ Enriched Compounds quantification

Classification	Average FTE	Duration (Quarters)	Total Man-Hours
Hazwat	3.0	2.5	3,275
MVO	1.0	2.5	1,092
HEO	1.0	2.5	1,092
IH Tech	1.0	2.5	1,092
Rad Tech	1.0	2.5	1,092
Supervisor	1.0	2.5	1,092
Total Man-Hours:			8,735
ODC (@\$0.298/mh)			\$2,603

### 3.2) Subtask #4 - Reject $>1\%$ $U^{235}$ $U_3O_8$ Processing

#### 3.2)1 Plan/Scope - Reject $>1\%$ $U^{235}$ $U_3O_8$ Processing

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Plant 1 Pad/Storage personnel will, per approved task order inventory request, locate and transport the containers of this waste stream to Building 56A for visual inspection to ensure there are no prohibited items or liquids present and to verify the contents per process knowledge. If prohibited items or liquids are present, they will be removed prior to transfer to the WPRAP blending facility. After the visual inspection, the containers will be returned to storage, awaiting processing through the WPRAP blending facility.

Plant 1 Pad/Storage personnel will, per approved task order inventory request, locate and transport the 664 containers of reject  $> 1\%$   $U^{235}$   $U_3O_8$  to the WPRAP blending facility for processing. The WPRAP blending facility will be designed to accommodate this stream for a material blend-down operation to achieve a homogeneous mixture at less than  $0.5 \text{ mg/L}$  of  $U^{235}$  or an overall material Uranium 235 enrichment of less than  $1\%$ . The blending facility will incorporate drum handling equipment and bulk material feeder that will feed a mixer. The drums will be opened to access the contents and the contents will be introduced into the mixer. The drums themselves will be size reduced and become part of the waste stream as debris. The mixer will be utilized to mix the excavated and characterized pit material and compounds to the prescribed concentration of  $U^{235}$ . Throughput of the WPRAP blending facility is assumed to be 10 drums per day with one shift operation. The blended down compounds will then be handled under the normal WPRAP procedures for pit materials for waste handling, loading and shipment.

Water removed from the containers will be processed through the Advanced Waste Water Treatment Facility. Any prohibited objects will be disposed through the appropriate channels.

### 3.1)2 - $> 1\%$ $U^{235}$ $U_3O_8$ quantification

Classification	Average FTE	Duration (Quarters)	Total Man-Hours
Hazwat	3.0	1.0	1,310
MVO	1.0	1.0	437
HCO	1.0	1.0	437
IH Tech	1.0	1.0	437
Rad Tech	1.0	1.0	437
Supervisor	1.0	1.0	437
Total Man-Hours:			3,495
ODC (@\$0.298/mh)			\$1,041

### 3.3) Subtask #5 - Reject $> 1\%$ $U^{235}$ Miscellaneous Compounds Processing

#### 3.3)1 Plan/Scope - Reject $> 1\%$ $U^{235}$ Miscellaneous Compounds Processing

This stream does not require a visual inspection as it was already performed under the NMD project. Any container noted to be wet during the previous visual inspection will be

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reinspected for free liquids and the liquids removed prior to transfer to the WPRAP blending facility.

This category is comprised of 38 cans of reject  $> 1\%$   $U^{235}$   $UF_4$ , 10 containers of reject  $> 1\%$   $U^{235}$   $UO_3$  and 180 containers of other reject  $> 1\%$   $U^{235}$  miscellaneous compounds for a total of 228 containers

Plant 1 Pad/Storage personnel will, per approved task order inventory request, locate and transport the 228 containers of reject  $> 1\%$   $U^{235}$  miscellaneous compounds to the WPRAP blending facility for processing. The WPRAP blending facility will be designed to accommodate this stream for a material blend-down operation to achieve a homogeneous mixture at less than 0.5 mg/L of  $U^{235}$  or an overall material Uranium 235 enrichment of less than 1%. The blending facility will incorporate drum handling equipment and bulk material feeder that will feed a mixer. The drums will be opened to access the contents and the contents will be introduced into the mixer. The drums themselves will be size reduced and become part of the waste stream as debris. The mixer will be utilized to mix the excavated and characterized pit material and compounds to the prescribed concentration of  $U^{235}$ . Throughput of the WPRAP blending facility is assumed to be 10 drums per day with one shift operation. The blended down compounds will then be handled under the normal WPRAP procedures for pit materials for waste handling, loading and shipment.

Water removed from the containers will be processed through the Advanced Waste Water Treatment Facility. Any prohibited objects will be disposed through the appropriate channels.

#### 3.4) Task #3 Quantification - Miscellaneous Compounds Processing

Classification	Average FTE	Duration (Quarters)	Total Man-Hours
Hazwat	3.0	0.5	655
MVO	1.0	0.5	218
HEO	1.0	0.5	218
IH Tech	1.0	0.5	218
Rad Tech	1.0	0.5	218
Supervisor	1.0	0.5	218
Total Man-Hours:			1,745
ODC (@\$0.298/mh)			\$520



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#### 4) Task #4 - Packaging

##### 4.1) Subtask #1 - $>1\%$ $U^{235}$ Enriched Compounds Packaging

###### 4.1)1 Plan/Scope - $>1\%$ $U^{235}$ Enriched Compounds Packaging

The blended down  $>1\%$   $U^{235}$  enriched compounds will be handled in accordance with the WPRAP operating procedures. The packaging of this blended down material consists of loading into gondola cars with other pit materials in the WPRAP facilities. This blended down waste stream will be part of the WPRAP profile for disposal at Envirocare of Utah, Inc through a profile amendment. The WPRAP Project will have control over when the gondola cars are loaded.

###### 4.1)2 Quantification - $>1\%$ $U^{235}$ Enriched Compounds Packaging

The manpower for packaging this waste stream is covered by PBS 5.

##### 4.2) Subtask #2 - Reject $>1\%$ $U^{235}$ $U_3O_8$ Packaging

###### 4.2)1 Plan/Scope - Reject $>1\%$ $U^{235}$ $U_3O_8$ Packaging

The blended down reject  $>1\%$   $U^{235}$   $U_3O_8$  compounds will be handled in accordance with the WPRAP operating procedures. The packaging of this blended down material consists of loading into gondola cars with other pit materials in the WPRAP facilities. This blended down waste stream will be part of the WPRAP profile for disposal at Envirocare of Utah, Inc through a profile amendment. The WPRAP Project will have control over when the gondola cars are loaded.

###### 4.2)2 Quantification - Reject $>1\%$ $U^{235}$ $U_3O_8$ Packaging

The manpower for packaging this waste stream is covered by PBS 5.

##### 4.3) Subtask #3 - Reject $>1\%$ $U^{235}$ Miscellaneous Compounds Packaging

###### 4.3)1 Plan/Scope - Reject $>1\%$ $U^{235}$ Miscellaneous Compounds Packaging

The blended down reject  $>1\%$   $U^{235}$  miscellaneous compounds will be handled in accordance with the WPRAP operating procedures. The packaging of this blended down material consists of loading into gondola cars with other pit materials in the WPRAP facilities. This blended down waste stream will be part of the WPRAP profile for disposal at Envirocare of Utah, Inc through a profile amendment. The WPRAP Project will have control over when the gondola cars are loaded.

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#### 4.3)2 Quantification - Reject > 1% U<sup>235</sup> Miscellaneous Compounds Packaging

The manpower for packaging this waste stream is covered by PBS 5.

#### 5) Task #5 - Fissile Compounds Shipping

##### 5.1) Subtask #1 - Fissile Compounds Shipping

##### 5.1)1 Plan/Scope - Fissile Compounds Shipping

The blended down fissile compounds packaged into gondola cars at the WPRAP facility will be transported to Envirocare of Utah, Inc. by the WPRAP Project. The WPRAP has discretion on the scheduling for shipping this material.

##### 5.2) Task #5 Quantification - Fissile Compounds Shipping

PBS 5 covers transportation and disposal activities for this waste stream, including sampling and confirmatory analysis.

#### 1.5.5 JUWPE - Fissile Metal

The fissile metal will be shipped to NFS in Erwin, TN for storage and the subsequent processing for the beneficial recycling of a significant portion of the materials for reuse in the nuclear fuel cycle. The recycling effort will be coordinated by the UMD, after the successful build and deployment of an operable pilot scale facility to process the Fernald nuclear materials by NFS. The UMD is currently accepting and managing the disposition of uranium product materials from the FEMP, and this recycling of uranium waste would be a continuation of UMD scope for use of excess DOE uranium materials. NFS has extensive experience processing materials for the Nuclear Navy and for use in the commercial nuclear fuel cycle and is currently performing bench scale testing on Fernald materials to explore recycling. The pilot facility will not only process all of the Fernald materials, it will also provide engineering and operations data for the construction of a large scale treatment facility to process the very large volumes of uranium materials from throughout the DOE complex.

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134 containers of UO<sub>2</sub> pellets (Section 1.5.4) will also be disposed of through this process.

#### 1) Task #1 - Planning

Planning for fissile metal disposition includes: assuring all work can be and is performed in the safest manner; identifying the specific containers associated with each waste stream; preparing task orders for pulling the containers from inventory, visually inspecting the containers, venting/decanting the containers if necessary, transporting the containers to

the packaging area, packaging, and preparing the final package for shipment; and performing management assessments of work processes and equipment.

## 2) Task #2 - Characterization

Characterization of this waste must be completed prior to shipment. Characterization will be an ongoing, iterative process performed in conjunction with the visual inspection process. In order to complete the characterization process, a visual inspection of the waste will be performed by waste characterization field personnel during the processing stage discussed below in Task 3. A digital photograph of the drum contents will be taken during this visual inspection process. The photograph will be downloaded into SWIFTS to assist in the characterization verification process. A written visual inspection form will also be completed that will become part of the permanent characterization file. Along with the visual inspection process, pieces of the fissile metal will be measured and weighed to determine the packaging requirements.

## 3) Task #3 - Processing

Processing required for the fissile metal streams include visual inspection to verify no prohibited items and no free liquid, venting and decanting if necessary.

### 3.1) Subtask #1 - $\leq 1\%$ $U^{235}$ Enriched Metal Processing

#### 3.1)1 Plan Scope - $\leq 1\%$ $U^{235}$ Enriched Metal Processing

Plant 1 Pad/Storage personnel will, per approved task order inventory request, locate 419 containers of  $\leq 1\%$   $U^{235}$  enriched metal, monitor containers for less than 10% Lower Explosive Limit (LEL) of hydrogen, open containers for visual inspection, document size and quantity of material in containers, vent/decant containers if necessary, and transport containers to Building 80 or 71. It has been assumed that 25 percent of the 419 (66) containers will require decanting. The assumed decant rate is 12 containers per day.

### 3.2) Subtask #2 - $> 1\%$ $U^{235}$ Enriched Metal Processing

#### 3.2)1 Plan/Scope - $> 1\%$ $U^{235}$ Enriched Metal Processing

Plant 1 Pad/Storage personnel will, per approved task order inventory request, locate 165 containers of  $> 1\%$   $U^{235}$  enriched metal, monitor containers for less than 10% Lower Explosive Limit (LEL) of hydrogen, open containers for visual inspection, document size and quantity of material in containers, vent/decant containers if necessary, and transport containers to Building 80 or 71. It has been assumed that 25 percent of the 163 (41) containers will require decanting. The assumed decant rate is 12 containers per day.

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### 3.3) Subtask #3 - 10 Containers of Reject Miscellaneous Enriched Metal Processing

#### 3.3)1 Plan/Scope - 10 Containers of Reject Miscellaneous Enriched Metal Processing

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Plant 1 Pad/Storage personnel will, per approved task order inventory request, locate 10 containers of reject miscellaneous enriched metal and 134 containers of UO<sub>2</sub> pellets, monitor containers for less than 10% Lower Explosive Limit (LEL) of hydrogen, open containers for visual inspection, document size and quantity of material in containers, vent/decant containers if necessary, and transport containers to Building 80 or 71. It has been assumed that 25 percent of the 10 (3) containers will require decanting. The assumed decant rate is 12 containers per day. The 134 containers of UO<sub>2</sub> pellets will not require decanting.

#### 3.4) Task #3 Quantification - Fissile Metal Processing

##### Decant Crew

Classification	Average FTE	Duration (Quarters)	Total Man-Hours
Hazwat	1.5	2.0	1,311
MVO	0.5	2.0	437
Rad Tech	0.5	2.0	437
IH	0.5	2.0	437
Supervisor	0.5	2.0	437
Total Man-Hours:			3,059
ODC (@\$0.298/mh)			\$912

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##### Movement Crew

Classification	Average FTE	Duration (Quarters)	Total Man-Hours
Hazwat	2.0	2	1,747
MVO	2.0	2	1,747
MC&A	0.5	2	437
IH	0.5	2	437
Rad Tech	1.0	2	874
Supervisor	0.5	2	437
Total Man-Hours:			5,679
ODC (@\$0.298/mh)			\$1,692

#### 4) Task #4 - Packaging

At Building 80 or 71, the containers must be repackaged to reduce drummed quantities to a DOT approved shipping amount that equals 350 grams or less of U<sup>235</sup>. The assumption made for this repackaging is that all of the waste is able to be packaged without any size

reduction, otherwise DOT exemptions will be sought for shipment of any pieces of metal that exceed 350 grams U<sup>235</sup>.

4.1) Subtask #1 -  $\leq 1\%$  U<sup>235</sup> Enriched Metal Packaging

4.1)1 Plan/Scope -  $\leq 1\%$  U<sup>235</sup> Enriched Metal Packaging

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The 419 containers of  $\leq 1\%$  U<sup>235</sup> enriched metals will be repackaged into 4,203 30/55 combination packages (a 30-gallon drum in a 55-gallon drum) or other approved fissile container. The assumed repackaging rate is four source containers repackaged into 40 drums per day. UWD personnel will place four drums of this material on a pallet for transfer to Building 30A to be staged for shipment.

4.1)2 Quantification -  $\leq 1\%$  U<sup>235</sup> Enriched Metal Packaging

Classification	Average FTE	Duration (Quarters)	Total Man-Hours
Hazwat	3.0	1	1,310
MVO	1.0	1	437
MC&A	0.3	1	131
QC	0.3	1	131
Rad Tech	0.5	1	218
Supervisor	0.5	1	218
<b>Total Man-Hours:</b>			<b>2,445</b>
<b>ODC (@\$0.298/mh)</b>			<b>\$727</b>

4.2) Subtask #2 -  $> 1\%$  U<sup>235</sup> Enriched Metal Packaging

4.2)1 Plan/Scope -  $> 1\%$  U<sup>235</sup> Enriched Metal Packaging

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The 165 containers of  $> 1\%$  U<sup>235</sup> enriched metals will be repackaged into 1,235 30/55 combo packages (a 30-gallon drum in 55-gallon drum) or other approved fissile container. The assumed repackaging rate is four source containers repackaged into approximately 30 drums. UWD personnel will place four drums of this material on a pallet for transfer to Building 30A to be staged for shipment.



#### 4.2)2 Quantification - > 1% U<sup>235</sup> Enriched Metal Packaging

Classification	Average FTE	Duration (Quarters)	Total Man-Hours
Hazwat	12.0	4.5	23,585
MVO	4.0	4.5	7,862
MC&A	1.0	4.5	1,965
QC	1.0	4.5	1,965
Rad Tech	2.0	4.5	3,931
Supervisor	1.0	4.5	1,965
Total Man-Hours:			41,273
ODC (@\$0.298/mh)			\$12,299

#### 4.3) Subtask #3 - Reject Miscellaneous Enriched Metal Packaging

##### 4.3)1 Plan/Scope - Reject Miscellaneous Enriched Metal Packaging

The 10 containers of reject miscellaneous enriched metal will be repackaged into 70 wooden boxes. The assumed repackaging rate is four source containers per day. UWD personnel will place four drums of this material on a pallet for transfer to Building 30A to be staged for shipment.

##### 4.3)2 Quantification - Reject Miscellaneous Enriched Metal Packaging

Classification	Average FTE	Duration (Quarters)	Total Man-Hours
Hazwat	3.0	1	1,310
MVO	1.0	1	437
MC&A	0.2	1	87
QC	0.2	1	87
Rad Tech	0.5	1	218
Supervisor	0.5	1	218
Total Man-Hours:			2,357
ODC (@\$0.298/mh)			\$702

#### 5) Task #5 - Fissile Metal Shipping

##### 5.1) Subtask #1 - Fissile Metal Shipping

##### 5.1)1 Plan/Scope - Fissile Metal Shipping

The palletized drums will be transferred to Building 30A for labeling and preparation for shipping. Shipments will be assembled for NFS and the proper documentation will be completed. Each shipment will contain a maximum of 72 drums not to exceed

40,000 pounds net trailer weight. The drums will be loaded onto trailers and secured by Transportation laborers. Shipping Services will be responsible for acquiring transport and overseeing DOT compliance issues.

Shipment Quantities – Fissile Metal

Waste Stream	Shippable Containers	Shipments
< = 1% U <sup>235</sup> enriched metal	2,658	37
> 1% U <sup>235</sup> enriched metal	1,220	77
Reject misc enriched metal	70	5

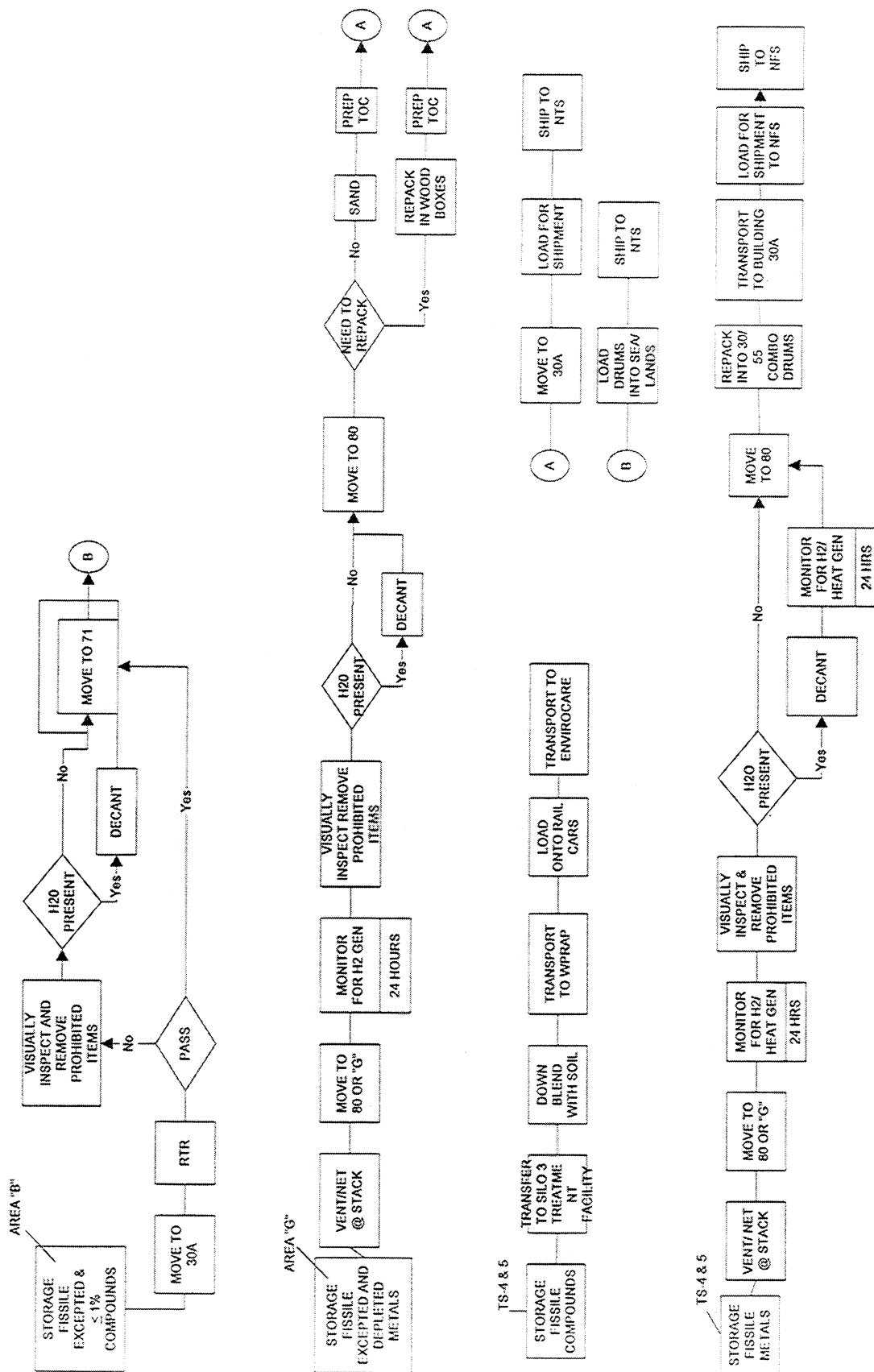
5.1)2 Quantification - Fissile Metal Shipping

Shipping/Loading Crew

Classification	Average FTE	Total Man-Hours
Hazwat	2.0	3,786
MVO	2.0	3,786
MC&A	0.5	473
Whse. Attend.	1.0	946
Rad Tech	1.0	1,893
QC engineer	1.0	1,893
Trans labor	1.0	1,893
Supervisor	1.0	1,893
Total Man-Hours:		16,563
ODC (@\$0.298/mh)		\$4,936

R1-  
F08-  
002

# MATERIAL FLOW CHART FOR UWD



## Exhibit 3

#	CITY #	MATL DESCRIPTION	QTY BEGIN	QTY REMAINS OF 1200	UNITS	PACKAGING AREA	REPACKAGED QUANTITY	SHIPPING CONTAINER (CONTAINERS)	CALCULATED DECANT DURATION (DAYS @ 12 PM)	CALCULATED VACUUM/BOILER DURATION (DAYS)	CALCULATED PACKAGING DURATION (DAYS)	PKG. RATE QTY/DAY	TOTAL DAYS	UNITS	MTU	URANUM, LBS	GRAVS U235	# SHIPMENTS REMAINING	COMMENTS
21C	A	DEPLETED COMPOUNDS (UO2)	108	108	CHTRS	BUILDING 71	4	4	3	N/A	2	60	5	DAY	25.3	55,678	45,815	4	U/LW TO LOAD & SHIP, 30 DRUMS PER ISO, TO HTS
3R	A	REJECT NORMAL COMPOUNDS	30			BUILDING 71	1	1	3	N/A	1	60	5	DAY	2.5		N/A	1	U/LW TO LOAD & SHIP, 30 DRUMS PER ISO, TO HTS
P/11H	A	MISCELLANEOUS DEPLETED UFA	28			BUILDING 71	2	2	1	N/A	1	60	3	DAY	2.5		N/A	2	U/LW TO LOAD & SHIP, 30 DRUMS PER ISO, TO HTS
24A	A	<1% ENRICHED COMPOUNDS (UO2S)	3,281	3,281	CHTRS	BUILDING 71	109	109	90	N/A	55	60	92	DAY	217.4	429,118	1,621,185	109	U/LW TO LOAD & SHIP, 30 DRUMS PER ISO, TO HTS
11R	A	REJECT <1% UO2S	550	550	CHTRS	BUILDING 71	18	18	15	N/A	9	60	17	DAY	68.8		N/A	18	U/LW TO LOAD & SHIP, 30 DRUMS PER ISO, TO HTS
12R	A	REJECT MISC. COMPOUNDS <1% 1% ENRICHED COMPOUNDS (UO2S), FISILE EXCEPTED	41			BUILDING 71	1	1	2	N/A	1	60	3	DAY	90		N/A	1	U/LW TO LOAD & SHIP, 30 DRUMS PER ISO, TO HTS
24B	A		15	15	CHTRS	BUILDING 71	1	1	1	N/A	1	60	2	DAY	0.6	3	54	1	U/LW TO LOAD & SHIP, 30 DRUMS PER ISO, TO HTS
24C	B	ENRICHED METALS (FISILE EXCEPTED)	3			BUILDING 80	3	1	1	N/A	1	12	3	DAY	0.6	3	20	1	PACK IN MAINT BOXES 1,1, 4 BOXES/TOC, 4 TOC-SHIPMENT ASSUME 25% DECANT ADDED 103 CONTAINERS FROM U/LW
21A	B	DEPLETED METAL (UO2)	1,337	1,337	CHTRS	BUILDING 80	1,337	223	28	N/A	448	3	449	DAY	699.6	1,341,720	1,335,639	56	PACK IN MAINT BOXES 1,1, 4 BOXES/TOC, 4 TOC-SHIPMENT
2R	B	REJECT NORMAL DRUMS OF METAL	34			BUILDING 80	34	6	N/A	N/A	12	3	12	DAY	1.5		N/A	2	PACK IN MAINT BOXES 1,1, 4 BOXES/TOC, 4 TOC-SHIPMENT
3R	B	REJECT MISC. DEPLETED METAL	20	20	CHTRS	BUILDING 80	20	4	N/A	N/A	7	3	7	DAY	7.5		N/A	1	PACK IN MAINT BOXES 2,1, 4 BOXES/TOC, 4 TOC-SHIPMENT
21B	B	DEPLETED INGOTS & OFFGAS (UO2)	201	201	INGOTS/COFFGAS	BUILDING 80	101	17	N/A	N/A	26	6	26	DAY	32.8	72,207	65,502	5	PACK IN MAINT BOXES 2,1, 4 BOXES/TOC, 4 TOC-SHIPMENT

## Exhibit 3, continued

#	CAF #	MATL DESCRIPTION	QTY BEGH	QTY REMAINS OF 1200	UNITS	PACKAGING AREA	REPACKAGED QUANTITY	SHIPPING QUANTITY (CONTAINERS)	CALCULATED RECYCLING DURATION (DAYS @ 12 per day)	CALCULATED VACUUM TRANSFER DURATION (DAYS)	CALCULATED PWS RATE QTY/DAY	TOTAL DAYS	UNITS	URANIUM LBS ORIGINAL	URANIUM LBS REMAINING	# SHIPMENTS MAXIMALLY	COMMENTS	
20A	C	RCRA 41% COMPOUNDS	246	246	CONTNRS	BUILDING 80	9	9	8	N/A	60	19	DAY	19.8	2,390	100,034	9	ISSUE WILL BE RESOLVED DUE TO RCRA TRANSFER TO LMV OR PER LSO
20B	C	SEALED SOURCES	624	624	EACH	BUILDING 80	2	2				6	DAY			6	SEALED SOURCES FROM SITE	
20C	C	THOPPERS	2	2	TEACH	PLANT T PAD	2	2	N/A	N/A		20	DAY			2	TRU RCRA HELLS IN TWO THOPPERS	
20B	E	41% ENRICHED METALS (UWZ2)	265	419	CONTNRS	BUILDING 80	4,203	4,203	8	N/A	4	107	DAY	104.6	293,575	993,156	50	PACKAGE IN 183 INTO LBS. REPACKAGE 400 LBS INTO 67 PER DAY. 25K DECONT. USED 154 CONTAINERS FROM LMV
20C	E	41% ENRICHED METALS (UWZ2)	163	163	CONTNRS	BUILDING 7100	1,235	1,235	4	N/A	4	41	DAY	331	72,843	413,346	20	PACKAGE IN 321 INTO LBS. REPACKAGE 100 LBS INTO 40 PER DAY. 25K DECONT. USED 154 CONTAINERS FROM LMV
14A	E	REFLECTOR ENRICHED METAL	10	10	CONTNRS	BUILDING 7100	70	70	1	N/A	4	5	DAY	2.0			5	PACKAGE IN 100 LBS. 2 PIECES PER CONTAINERS, 25K DECONT
21		DEPLETED UO2 (HOLD BACK)	94		# CONTNRS					N/A	N/A			14,311.9		8	COMPLETE	

## Fissile compounds processing at IT

#	Change #	MAIL DESCRIPTION	QTY BEGR	QTY REMAINS OF 1200	UNITS	PACKAGING AREA	PROCESS RATE QTY/HR	TOTAL \$/H	UNITS	URANIUM LBS ORIGINAL	URANIUM LBS REMAINING	GRAMS U235	COMMENTS
269	C	RCRA >1% COMPOUNDS	132	132	CHTRS	IT	10	14	DAY	6.5	14311	75797	ISSUE WILL BE CLASSIFIED FOR RCRA BLEND W/ WAP FOR SHIPMENT TO E-CARE
274	D	>1% U.S.C.-HELD COMPOUNDS (UWZ)	1290	1362	CHTRS	IT	10	140	DAY	455	100259	559577	BLEND W/ WAP FOR SHIPMENT VIA RAIL TO E-CARE
178	D	REJECT >1% UO3	10	10	CHTRS	IT	10	1	DAY	1.0			BLEND W/ WAP FOR SHIPMENT VIA RAIL TO E-CARE
163	D	REJECT >1% UF4	145	145	CHTRS	IT	10	15	DAY	2.0			BLEND W/ WAP FOR SHIPMENT VIA RAIL TO E-CARE
173	D	>1% U2O8	664	664	CHTRS	IT	10	87	DAY	71.4			BLEND W/ WAP FOR SHIPMENT VIA RAIL TO E-CARE
209	D	U.S.C. COMPOUNDS >1%	180	180	CHTRS	IT	10	18	DAY	2.1			BLEND W/ WAP FOR SHIPMENT VIA RAIL TO E-CARE

NONACTINIDE ISOTOPES AND SEALED SOURCES					
ITEM	SEALED SOURCE OR STANDARD	ISOTOPE(S)	QTY.	ESTIMATED COST COMMENTS	COST PER UNIT TOTAL COST
1	Actinide Sources-1	U-238, Th-228, Th-230, Th-232	288	Waste profiling for NTS LLW disposal: \$50 - \$100 per source range.	100.00 28,800.00
2	Actinide Sources-2	Am-241	56	Disposal as TRU waste: \$100 - \$150 per source range. Characterization for WIPP WAC: \$50,000/drum (piggyback on Mound Site Characterization).*	150.00 8,400.00
3	Neutron Sources-1	Am/Be	2	\$10,000 per source to return to supplier. Return Am/Be source to supplier (\$10,000); Characterize & prepare waste profile for Cs-137 sources as LLW: \$50 - \$100 per source range; Disposal as Normally Occurring Radioactive Material (NORM) at US Ecology: \$1500 per source range.	10,000.00 20,000.00
4	Orphan Sources-1	Am/Be, Cs137, Ra-226	3	Waste profiling for NTS LLW disposal: \$50 - \$100 per source range.	Varies (see Estimated Cost Comments) 11,600.00
5	Accountable & Exempt Sources	Various	224	Disposal as NORM at US Ecology.	100.00 22,400.00
6	Accountable & Exempt Sources-2	Ra-226	51	Disposal as NORM at US Ecology.	1,500.00 76,500.00
Subtotal					167,700.00
Packaging**					910,540.80
Shipping (assumed 3 @ \$4000)					12,000.00
Burial Fee (assumed \$10M/320 drums)					1,480.00
Administrative + 10% Contingency***					110,000.00
Grand Total					1,201,720.80

\*If unable to piggyback on Mound Site's characterization, this estimate would increase by \$2.8 million -- See NISSMG report.

\*\*Based this on March 2001 shipment of 14 standards to BWX where 537 manhours were utilized in packaging (537 divided by 14 = 38.4/standard; 38.4 x 624 x \$38/manhour).

\*\*\*This covers task orders, material disposition orders, MC&A, etc. and any incidental increase in sealed sources.



## **SECTION 3**

### **2.0 SCHEDULE**





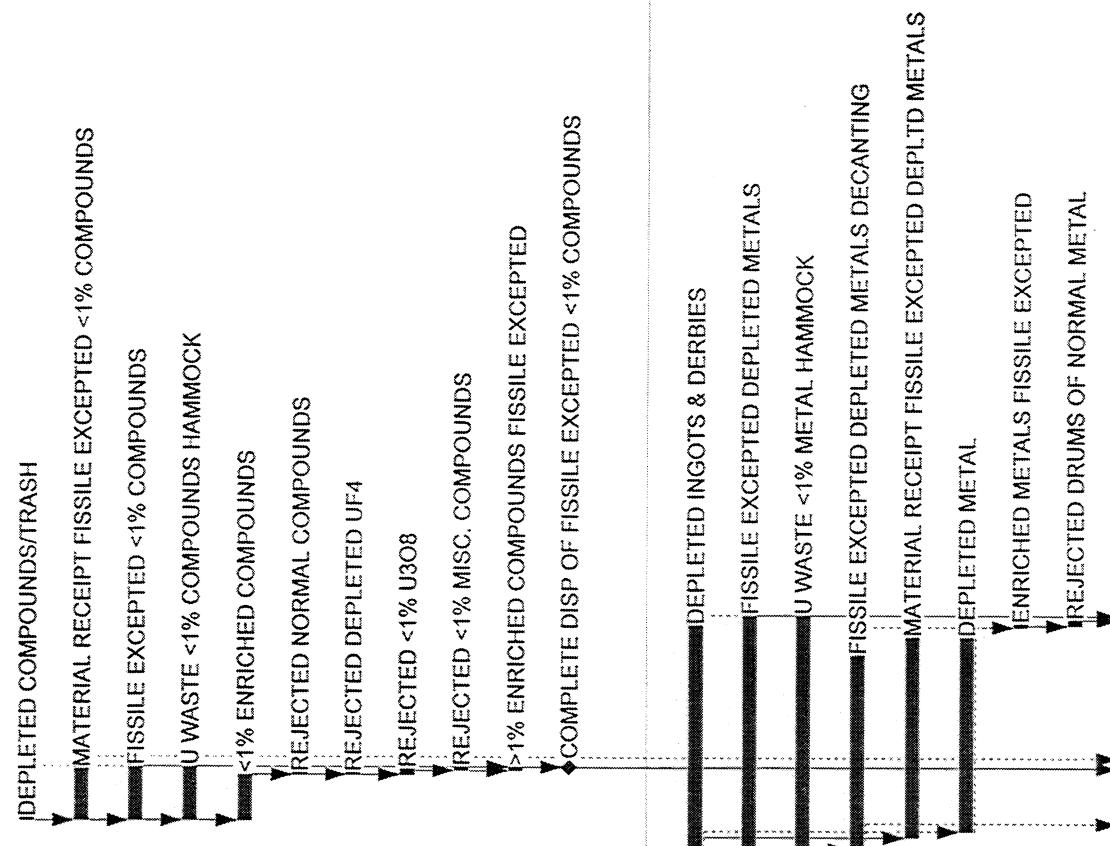
**J PBS 08 - NUCLEAR MATERIALS**  
**1.1.J.C URANIUM WASTE**

**JUWPA FISSILE EXCEPTED <1% COMPOUNDS**

J9UWPA21C0	DEPLETED COMPOUNDS/TRASH	11JUL01*	18JUL01	5
J9UWPA0005	MATERIAL RECEIPT FISSILE EXCEPTED <1% COMPOUNDS	11JUL01	24JAN02	108
J9UWPAH000	FISSILE EXCEPTED <1% COMPOUNDS	11JUL01	07FEB02	116*
J9UWPAH05	U WASTE <1% COMPOUNDS HAMMOCK	11JUL01	07FEB02	116*
J9UWPA24A0	<1% ENRICHED COMPOUNDS	16JUL01	07JAN02	95
J9UWPA03R0	REJECTED NORMAL COMPOUNDS	02JAN02	09JAN02	5
J9UWPA09R0	REJECTED DEPLETED UF4	03JAN02	16JAN02	8
J9UWPA18R0	REJECTED <1% U3O8	07JAN02	31JAN02	16
J9UWPA19R0	REJECTED <1% MISC. COMPOUNDS	22JAN02	05FEB02	9
J9UWPA24B0	>1% ENRICHED COMPOUNDS FISSILE EXCEPTED	23JAN02	07FEB02	10
J9UWPAMS03	COMPLETE DISP OF FISSILE EXCEPTED <1% COMPOUNDS		07FEB02	0

**JUWPB FISSILE EXCEPTED DEPLETED METALS**

J9UWPB21B0	DEPLETED INGOTS & DERBIES	04DEC00	14AUG03	542
J9UWPBH000	FISSILE EXCEPTED DEPLETED METALS	04DEC00	17SEP03	560*
J9UWPBH06	U WASTE <1% METAL HAMMOCK	04DEC00	17SEP03	560*
J9UWPB0030	FISSILE EXCEPTED DEPLETED METALS DECANTING	27MAR01*	16APR03	412
J9UWPB0005	MATERIAL RECEIPT FISSILE EXCEPTED DEPLTD METALS	15MAY01	01JUL03	426
J9UWPB21A0	DEPLETED METAL	04JUN01*	01JUL03	416
J9UWPB24C0	ENRICHED METALS FISSILE EXCEPTED	07AUG03*	19AUG03	7
J9UWPB02R0	REJECTED DRUMS OF NORMAL METAL	12AUG03	04SEP03	14



**FLUOR FERNALD**  
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Start Date  
 31DEC05  
 Finish Date  
 01DEC00  
 Data Date  
 07SEP01 11:01  
 Run Date

01DEC00 BLCF - J801  
 31DEC05  
 01DEC00  
 07SEP01 11:01

Sheet 1 of 3  
**NUCLEAR MATERIALS**  
**1.1.J.C URANIUM WASTE**

Date  
 Revision  
 R1-F08-001  
 R1-F08-002  
 R1-F08-003  
 Checked/Approved

Activity ID	Activity Description	Early Start	Early Finish	Orig Dur	FY01	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11
<b>JUWPB FISSILE EXCEPTED DEPLETED METALS</b>															
J9UWPB07R0	REJECTED MISC. DEPLETED METAL	03SEP03	17SEP03	9											
J9UWPBMS04	COMPLETE DISP. OF FISSILE EXCEPTED DEPLTD METALS		17SEP03	0											
<b>JUWPC RCRA MATERIAL/SEALED SOURCES</b>															
J9UWPC0020	SAMPLING & ANALYSIS	01OCT01*	04APR02	102											
J9UWPC007	RCRA MATERIAL/SEALED SOURCES HAMMOCK	01OCT01	26AUG03	382*											
J9UWPC000	RCRA MATERIAL/SEALED SOURCES	01OCT01	28AUG03	384*											
J9UWPC26A0	<1% RCRA COMPOUNDS	07FEB02	04MAR02	13											
J9UWPC0005	MATERIAL RECEIPT RCRA MATERIAL & SEALED SOURCES	07FEB02	26AUG03	312*											
J9UWPC2900	T-HOPPERS	01JUL02*	25FEB03	130											
J9UWPC2800	SEALED SOURCES	01OCT02*	26AUG03	182											
J9UWPCMS06	CONTRACT FOR UWD RCRA DISPOSAL		30JUN03*	0											
J9UWPC26B0	>1% RCRA COMPOUNDS	12AUG03	28AUG03	11											
J9UWPCMS05	COMPLETE DISP. OF RCRA MATL & SEALED SOURCES		28AUG03	0											
<b>JUWPD FISSILE COMPOUNDS</b>															
J9UWPD0005	MATERIAL RECEIPT FISSILE COMPOUNDS	14MAR02	30MAY02	44											
J9UWPDH8	FISSILE COMPOUNDS HAMMOCK	14MAR02	11AUG03	284*											
J9UWPD12R0	REJECTED >1% UO3	03JUN02	03JUN02	1											
J9UWPD17R0	REJECTED >1% U3O8	04JUN02	01OCT02	67											
J9UWPD20R0	REJECTED MISC. COMPOUNDS	02OCT02	31OCT02	18											
J9UWPD16R0	REJECTED >1% UF4	04NOV02	02DEC02	15											
J9UWPD25A0	>1% ENRICHED COMPOUNDS	03DEC02	11AUG03	139											

Start Date

Finish Date

Data Date

Run Date

01DEC00

31DEC05

01DEC00

07SEP01 11:01

BLCF - J901

NUCLEAR MATERIALS

1.1.J.C URANIUM WASTE

Sheet 2 of 3

Early Bar

Progress Bar

Critical Activity

Date

Revision

checked/Approved

R1-F08-001

R1-F08-002

R1-F08-003

FLUOR FERNALD

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## **SECTION 3**

### **3.0 MANPOWER PLANS**



## Manpower Planning Sheet (CR2)

MPS #	1JC01	FISSILE EXCEPTED <1% COMPOUNDS

[illegible]

## Manpower Planning Sheet (CR2)

MPS #	1JC01	FISSILE EXCEPTED <1% COMPOUNDS

[illegible]



[illegible]

## Manpower Planning Sheet (CR2)

MPS #	1JC01	FISSILE EXCEPTED <1% COMPOUNDS

[illegible]



## **Manpower Planning Sheet (CR2)**

MPS #	1JC02	FISSILE EXCEPTED & DEPLETED METALS

DRIVERS	START DATE	END DATE	FY 2007				FY 2008				FY 2009				FY 2010				FY 2011			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
801 Nuclear Materials Summary	10/02/2000	05/20/2002																				
802 Setup of Fac. & Repkg of Uranium Metals	10/02/2000	07/18/2001																				
803 Setup of Fac. & Repkg of < 1% Uranium	10/02/2000	08/30/2001																				
804 Facilities Setup for Repkg > 1 WT% U235	10/02/2000	12/27/2001																				
805 Shipment of Nuclear Materials	10/02/2000	01/10/2002																				
806 Nuc. Material Risk/PPE/SCA/Planning/Wrhs	10/02/2000	05/20/2002																				
807 Small Scale Processing of Nuclear Material	10/02/2000	01/30/2001																				
808 UWD Depleted LLW & Depleted Ingots	10/02/2000	04/17/2002																				
809 Enriched Oxide/Metal & Residue	10/02/2000	01/06/2003																				
810 UWD Planning	10/02/2000	09/30/2003																				
811 PPE & SCA Support for UWD Activities	07/23/2001	10/16/2003																				
812 UWD RCRA Materials	02/04/2002	01/20/2004																				
813 Feas. Study Processing Uranium Waste	10/01/2002	06/18/2003																				
814 UWZ Design/Const/Treat/Ship	10/02/2003	09/29/2005																				
General Labor	Hazwat		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Transportation Labor	Motor Vehicle Operator		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Procurement	Material Property Control Rep.		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
QA/QC	QA/QC Tech.		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Environmental Safety & Health	Rad Tech		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Operations	Operations Manager		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
General Labor	Hazwat		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Transportation Labor	Motor Vehicle Operator		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Procurement	Material Property Control Rep.		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
QA/QC	QA/QC Tech.		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Environmental Safety & Health	Rad Tech		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Operations	Operations Manager		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Craft Labor	Carpenter		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
General Labor	Hazwat		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Transportation Labor	Motor Vehicle Operator		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Procurement	Material Property Control Rep.		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
QA/QC	QA/QC Tech.		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Environmental Safety & Health	Rad Tech		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Operations	Operations Manager		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Craft Labor	Carpenter		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
General Labor	Hazwat		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Transportation Labor	Motor Vehicle Operator		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Procurement	Material Property Control Rep.		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
QA/QC	QA/QC Tech.		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Environmental Safety & Health	Rad Tech		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Operations	Operations Manager		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

# Manpower Planning Sheet (CR2)

MPS # 1JC02 FISSILE EXCEPTED & DEPLETED METALS

DRIVERS		START DATE	END DATE	TOT	FY 2001				FY 2002				FY 2003				FY 2004				FY 2005				FY 2006			
					Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Reject Normal M	General Labor	Hazwat		1.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.5	0	0	0	0	0	0	0	0	0
Reject Normal M	Transportation Labor	Motor Vehicle Operator		0.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	0	0	0	0	0	0	0	0	0
Reject Normal M	Procurement	Material Property Control Rep.		0.10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0
Reject Normal M	QA/QC	QA/QC Tech.		0.10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0
Reject Normal M	Environmental Safety & H	Rad Tech		0.40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0	0	0	0	0	0	0	0	0
Reject Normal M	Operations	Operations Manager		0.20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0	0	0	0	0	0	0	0	0
Reject Normal M	Craft Labor	Carpenter		0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Reject misc depl	General Labor	Hazwat		1.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.5	0	0	0	0	0	0	0	0	0
Reject misc depl	Transportation Labor	Motor Vehicle Operator		0.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	0	0	0	0	0	0	0	0	0
Reject misc depl	Procurement	Material Property Control Rep.		0.10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0
Reject misc depl	QA/QC	QA/QC Tech.		0.10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0
Reject misc depl	Environmental Safety & H	Rad Tech		0.30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0	0	0	0	0	0	0	0	0
Reject misc depl	Operations	Operations Manager		0.20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0	0	0	0	0	0	0	0	0
shipping crew	General Labor	Hazwat		24.00	0	0	0	0	2	2	2	2	4	4	4	4	0	0	0	0	0	0	0	0	0	0	0	0
shipping crew	Transportation Labor	Motor Vehicle Operator		12.00	0	0	0	0	1	1	1	1	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0
shipping crew	QA/QC	QA/QC Tech.		4.50	0	0	0	0	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1	0	0	0	0	0	0	0	0	0	0	0	0
shipping crew	Environmental Safety & H	Rad Tech		5.00	0	0	0	0	0.5	0.5	0.5	0.5	0.5	1	0.5	1	0	0	0	0	0	0	0	0	0	0	0	0
shipping crew	Operations	Operations Manager		5.00	0	0	0	0	0.5	0.5	0.5	0.5	0.5	1	0.5	1	0	0	0	0	0	0	0	0	0	0	0	0
Loading crew	Transportation Labor	Motor Vehicle Operator		12.00	0	0	0	0	1	1	1	1	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0
Loading crew	Transportation Labor	Transportation Laborer		12.00	0	0	0	0	1	1	1	1	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0
Loading crew	Procurement	Material Property Control Rep.		3.00	0	0	0	0	0	0	0.5	0.5	0.5	0.5	0.5	0.5	0	0	0	0	0	0	0	0	0	0	0	0
Loading crew	QA/QC	QA/QC Tech.		5.00	0	0	0	0	0.5	0.5	0.5	0.5	0.5	1	0.5	1	0	0	0	0	0	0	0	0	0	0	0	0
Loading crew	Environmental Safety & H	Rad Tech		5.00	0	0	0	0	0.5	0.5	0.5	0.5	0.5	1	0.5	1	0	0	0	0	0	0	0	0	0	0	0	0
Loading crew	Transportation Labor	Professional Warehouse Attendant		6.00	0	0	0	0	0.5	0.5	0.5	0.5	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
Loading crew	Operations	Operations Manager		6.00	0	0	0	0	0.5	0.5	0.5	0.5	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
Plant 1 Pad crew	General Labor	Hazwat		10.00	0	0	0	0	0	0	0	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0
Plant 1 Pad crew	Transportation Labor	Motor Vehicle Operator		9.50	0	0	0	0	0	0	0	2	1.5	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0
Plant 1 Pad crew	Procurement	Material Property Control Rep.		2.50	0	0	0	0	0	0	0	0.5	0.5	0.5	0.5	0.5	0	0	0	0	0	0	0	0	0	0	0	0
Plant 1 Pad crew	Environmental Safety & H	Rad Tech		5.00	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
Plant 1 Pad crew	Operations	Operations Manager		0.50	0	0	0	0	0	0	0	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Plant 1 Pad crew	Environmental Safety & H	Industrial Hygienist Tech		2.50	0	0	0	0	0	0	0	0.5	0.5	0.5	0.5	0.5	0	0	0	0	0	0	0	0	0	0	0	0

## Manpower Planning Sheet (CR2)

MPS #	1JC02	FISSILE EXCEPTED & DEPLETED METALS

DRIVERS	START DATE	END DATE	FY 2007				FY 2008				FY 2009				FY 2010				FY 2011			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
General Labor	Hazwat		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Transportation Labor	Motor Vehicle Operator		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Procurement	Material Property Control Rep.		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
QA/QC	QA/QC Tech.		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Environmental Safety & Health	Rad Tech		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Operations	Operations Manager		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Craft Labor	Carpenter		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
General Labor	Hazwat		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Transportation Labor	Motor Vehicle Operator		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Procurement	Material Property Control Rep.		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
QA/QC	QA/QC Tech.		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Environmental Safety & Health	Rad Tech		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Operations	Operations Manager		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
General Labor	Hazwat		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Transportation Labor	Motor Vehicle Operator		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
QA/QC	QA/QC Tech.		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Environmental Safety & Health	Rad Tech		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Operations	Operations Manager		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Transportation Labor	Motor Vehicle Operator		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
QA/QC	QA/QC Tech.		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Environmental Safety & Health	Rad Tech		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Operations	Operations Manager		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Transportation Labor	Motor Vehicle Operator		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Transportation Labor	Transportation Laborer		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Procurement	Material Property Control Rep.		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
QA/QC	QA/QC Tech.		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Environmental Safety & Health	Rad Tech		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Operations	Operations Manager		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Transportation Labor	Motor Vehicle Operator		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Procurement	Professional Warehouse Attendant		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Operations	Operations Manager		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
General Labor	Hazwat		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Transportation Labor	Motor Vehicle Operator		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Procurement	Material Property Control Rep.		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Environmental Safety & Health	Rad Tech		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Operations	Operations Manager		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Environmental Safety & Health	Industrial Hygienist Tech.		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	



**Manpower Planning Sheet (CR2)**

MPS #	1JC02	FISSILE EXCEPTED & DEPLETED METALS

[illegible]



## Manpower Planning Sheet (CR2)

MPS #	1JC03	RCRA MATERIAL & SEALED SOURCES

DRIVERS		START DATE	END DATE	TOT	FY 2001				FY 2002				FY 2003				FY 2004				FY 2005				FY 2006			
					Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
801	Nuclear Materials Summary	10/02/2000	05/20/2002		xxx	xxx	xxx	xxx	xxx	xxx	xx																	
802	Setup of Fac. & Repkg of Uranium Metals	10/02/2000	07/18/2001		xxx	xxx	xxx	xx																				
803	Setup of Fac. & Repkg of < 1% Uranium	10/02/2000	08/30/2001		xxx	xxx	xxx	xx																				
804	Facilities Setup for Repkg > 1 WT% U235	10/02/2000	12/27/2001		xxx	xxx	xxx	xxx	xxx																			
805	Shipment of Nuclear Materials	10/02/2000	01/10/2002		xxx	xxx	xxx	xxx	xxx	x																		
806	Nuc. Material Risk/PPE/ISCA/Planning/Whse	10/02/2000	05/20/2002		xxx	xxx	xxx	xxx	xxx	xxx	xx																	
807	Small Scale Processing of Nuclear Material	10/02/2000	01/30/2001		xxx	x																						
808	UWD Depleted LLW & Depleted Ingots	10/02/2000	04/17/2002		xxx	xxx	xxx	xxx	xxx	xxx	xxx	x																
809	Enriched Oxide/Metal & Residue	10/02/2000	01/06/2003		xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	x														
810	UWD Planning	10/02/2000	09/30/2003		xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx											
811	PPE & SCA Support for UWD Activities	07/23/2001	10/16/2003		xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx							
812	UWD RCRA Materials	02/04/2002	01/20/2004						xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	x						
813	Feas. Study Processing Uranium Waste	10/01/2002	06/18/2003							xx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	x					
814	UWZ Design/Const/Treat/Ship	10/02/2003	09/29/2005														xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
<=1% RCRA Co	General Labor	Hazwat		5.00	0	0	0	0	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<=1% RCRA Co	Transportation Labor	Motor Vehicle Operator		2.50	0	0	0	0	1	1.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<=1% RCRA Co	Procurement	Material Property Control Rep.		0.10	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<=1% RCRA Co	Environmental Safety & H	Rad Tech		0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<=1% RCRA Co	Operations	Operations Manager		2.00	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<=1% RCRA Co	Environmental	Environmental Scientist Tech.		0.60	0	0	0	0	0.3	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>1% RCRA Com	General Labor	Hazwat		1.50	0	0	0	0	0	0	0	0	0	0	0	0	1.5	0	0	0	0	0	0	0	0	0	0	0
>1% RCRA Com	Transportation Labor	Motor Vehicle Operator		0.50	0	0	0	0	0	0	0	0	0	0	0	0	0.5	0	0	0	0	0	0	0	0	0	0	0
>1% RCRA Com	Procurement	Material Property Control Rep.		0.50	0	0	0	0	0	0	0	0	0	0	0	0	0.5	0	0	0	0	0	0	0	0	0	0	0
>1% RCRA Com	QA/QC	QA/QC Tech.		0.50	0	0	0	0	0	0	0	0	0	0	0	0	0.5	0	0	0	0	0	0	0	0	0	0	0
>1% RCRA Com	Environmental Safety & H	Rad Tech		0.50	0	0	0	0	0	0	0	0	0	0	0	0	0.5	0	0	0	0	0	0	0	0	0	0	0
>1% RCRA Com	Operations	Operations Manager		0.50	0	0	0	0	0	0	0	0	0	0	0	0	0.5	0	0	0	0	0	0	0	0	0	0	0
T-Hoppers	General Labor	Hazwat		10.50	0	0	0	0	0	0	0	7	3.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
T-Hoppers	Transportation Labor	Motor Vehicle Operator		2.30	0	0	0	0	0	0	0	1.5	0.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
T-Hoppers	Procurement	Material Property Control Rep.		0.80	0	0	0	0	0	0	0	0.5	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
T-Hoppers	QA/QC	QA/QC Tech.		0.80	0	0	0	0	0	0	0	0.5	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
T-Hoppers	Environmental Safety & H	Rad Tech		1.50	0	0	0	0	0	0	0	1	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
T-Hoppers	Operations	Operations Manager		0.80	0	0	0	0	0	0	0	0.5	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
sources	General Labor	Hazwat		24.50	0	0	0	0	0	0	0	0	7	7	7	3.5	0	0	0	0	0	0	0	0	0	0	0	0

MPS #	1JC03	RCRA MATERIAL & SEALED SOURCES

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MPS #	1JC03	RCRA MATERIAL & SEALED SOURCES

[illegible]

MPS #	1JC03	RCRA MATERIAL & SEALED SOURCES

[illegible]

MPS #	1JC04	FISSILE COMPOUNDS

[illegible]

MPS #	1JC04	FISSILE COMPOUNDS

DRIVERS	START DATE	END DATE	FY 2007				FY 2008				FY 2009				FY 2010				FY 2011							
			Q1		Q2		Q3		Q4		Q1		Q2		Q3		Q4		Q1		Q2		Q3		Q4	
801 Nuclear Materials Summary	10/02/2000	05/20/2002																								
802 Setup of Fac. & Repkg of Uranium Metals	10/02/2000	07/18/2001																								
803 Setup of Fac. & Repkg of < 1% Uranium	10/02/2000	08/30/2001																								
804 Facilities Setup for Repkg > 1 WT% U235	10/02/2000	12/27/2001																								
805 Shipment of Nuclear Materials	10/02/2000	01/10/2002																								
806 Nuc. Material Risk/PPE/SCA/Planning/WHS	10/02/2000	05/20/2002																								
807 Small Scale Processing of Nuclear Material	10/02/2000	01/30/2001																								
808 UWD Depleted LLW & Depleted Ingots	10/02/2000	04/17/2002																								
809 Enriched Oxide/Metal & Residue	10/02/2000	01/06/2003																								
810 UWD Planning	10/02/2000	09/30/2003																								
811 PPE & SCA Support for UWD Activities	07/23/2001	10/16/2003																								
812 UWD RCRA Materials	02/04/2002	01/20/2004																								
813 Feas. Study Processing Uranium Waste	10/01/2002	06/18/2003																								
814 UWZ Design/Const/Treat/Ship	10/02/2003	09/29/2005																								
General Labor	Hazwat		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Transportation Labor	Motor Vehicle Operator		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Transportation Labor	Heavy Equipment Operator		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Environmental Safety & Health	Industrial Hygienist Tech.		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Environmental Safety & Health	Rad Tech		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Operations	Operations Manager		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
General Labor	Hazwat		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Transportation Labor	Motor Vehicle Operator		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Transportation Labor	Heavy Equipment Operator		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Environmental Safety & Health	Industrial Hygienist Tech.		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Environmental Safety & Health	Rad Tech		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Operations	Operations Manager		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
General Labor	Hazwat		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Transportation Labor	Motor Vehicle Operator		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Transportation Labor	Heavy Equipment Operator		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Environmental Safety & Health	Industrial Hygienist Tech.		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Environmental Safety & Health	Rad Tech		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Transportation Labor	Heavy Equipment Operator		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Operations	Operations Manager		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	



MPS #	1JC04	FISSILE COMPOUNDS

**Manpower Planning Sheet (CR2)**

[illegible]



DRIVERS		START DATE	END DATE	TOT	FY 2001				FY 2002				FY 2003				FY 2004				FY 2005				FY 2006			
					Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4				
801	Nuclear Materials Summary	10/02/2000	05/20/2002		xxx	xxx	xxx	xxx	xxx	xxx	xxx	xx																
802	Setup of Fac. & Repkg of Uranium Metals	10/02/2000	07/18/2001		xxx	xxx	xxx	x																				
803	Setup of Fac. & Repkg of < 1% Uranium	10/02/2000	08/30/2001		xxx	xxx	xxx	xx																				
804	Facilities Setup for Repkg > 1 WT% U235	10/02/2000	12/27/2001		xxx	xxx	xxx	xxx	xxx																			
805	Shipment of Nuclear Materials	10/02/2000	01/10/2002		xxx	xxx	xxx	xxx	xxx	x																		
806	Nuc. Material Risk/PPE/SCA/Planning/Whse	10/02/2000	05/20/2002		xxx	xxx	xxx	xxx	xxx	xxx	xxx	xx																
807	Small Scale Processing of Nuclear Material	10/02/2000	01/30/2001		xxx	x																						
808	UWD Depleted LLW & Depleted Ingots	10/02/2000	04/17/2002		xxx	xxx	xxx	xxx	xxx	xxx	xxx	x																
809	Enriched Oxide/Metal & Residue	10/02/2000	01/06/2003		xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx				
810	UWD Planning	10/02/2000	09/30/2003		xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx				
811	PPE & SCA Support for UWD Activities	07/23/2001	10/16/2003		xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx				
812	UWD RCRA Materials	02/04/2002	01/20/2004		xxx																							
813	Feas. Study Processing Uranium Waste	10/01/2002	06/18/2003						xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	x				
814	UWZ Design/Cons/Treat/Ship	10/02/2003	09/29/2005														xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx				
>1% Enriched M	General Labor	Hazwat		54.00	0	0	0	0	0	0	0	6	12	12	12	12	0	0	0	0	0	0	0	0				
>1% Enriched M	Transportation Labor	Motor Vehicle Operator		18.00	0	0	0	0	0	0	2	4	4	4	4	4	0	0	0	0	0	0	0	0				
>1% Enriched M	Procurement	Material Property Control Rep.		4.50	0	0	0	0	0	0	0.5	1	1	1	1	1	0	0	0	0	0	0	0	0				
>1% Enriched M	QA/QC	QA/QC Tech.		4.50	0	0	0	0	0	0	0.5	1	1	1	1	1	0	0	0	0	0	0	0	0				
>1% Enriched M	Environmental Safety & H	Rad Tech		9.00	0	0	0	0	0	0	1	2	2	2	2	2	0	0	0	0	0	0	0	0				
>1% Enriched M	Operations	Operations Manager		5.00	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0				
<=1% Enriched	General Labor	Hazwat		6.00	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0				
<=1% Enriched	Transportation Labor	Motor Vehicle Operator		2.00	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0				
<=1% Enriched	Procurement	Material Property Control Rep.		0.50	0	0	0	0	0	0	0	0	0	0	0	0.6	0	0	0	0	0	0	0	0				
<=1% Enriched	QA/QC	QA/QC Tech.		0.50	0	0	0	0	0	0	0	0	0	0	0	0.6	0	0	0	0	0	0	0	0				
<=1% Enriched	Environmental Safety & H	Rad Tech		1.00	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0				
<=1% Enriched	Operations	Operations Manager		1.00	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0				
Reject Misc. Enri	General Labor	Hazwat		6.00	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0				
Reject Misc. Enri	Transportation Labor	Motor Vehicle Operator		2.00	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0				
Reject Misc. Enri	Procurement	Material Property Control Rep.		0.40	0	0	0	0	0	0	0	0	0	0	0	0.4	0	0	0	0	0	0	0	0				
Reject Misc. Enri	QA/QC	QA/QC Tech.		0.40	0	0	0	0	0	0	0	0	0	0	0	0.4	0	0	0	0	0	0	0	0				
Reject Misc. Enri	Environmental Safety & H	Rad Tech		0.50	0	0	0	0	0	0	0	0	0	0	0	0.5	0	0	0	0	0	0	0	0				
Reject Misc. Enri	Operations	Operations Manager		0.50	0	0	0	0	0	0	0	0	0	0	0	0.5	0	0	0	0	0	0	0	0				
Sheet Totals:				116.00	0.00	0.00	0.00	0.00	0.00	0.00	11.00	21.00	21.00	21.00	21.00	21.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			

MPS #	1JC05	FISSILE METALS

[illegible]

## **SECTION 3**

### **4.0 ESTIMATE**



**JUWPA**

**FISSILE EXCEPTED < 1% COMPOUNDS**



09/07/2001  
8:29 AM**Fluor Fernald, Inc.**

DATE: 06-Sep-01  
 PROJECT MGR: Donald Paine  
 CAM: Donald Paine  
 PREPARED BY: Mary Stone  
 FISCAL YEAR: 2001-2002

ESTIMATE SUPPORT WORKSHEET  
 FOR ACTIVITY BASED ESTIMATING  
 \*\*\*\* STATED IN FY01 DOLLARS \*\*\*\*  
 (1 FTE EQUALS 1747 HOURS)

COMMENT#: R1-F08-002, 535, E724

PBS: 08

WBS: 1.1.J

CTRL ACCT: JUWP

CHARGE NO: JUWPA

Resource: HAZWAT  
 Res Dept: 946

HAZWAT  
 Overtime:

EOC:  
 HOU

LABOR

Class:

	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Yr Hours:	3,628.7	4,070.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	3,628.7	7,699.0	7,699.0	7,699.0	7,699.0	7,699.0	7,699.0	7,699.0	7,699.0	7,699.0
Yr Total Cost:	104,472	123,344	0	0	0	0	0	0	0	0
Cum Total Cost:	104,472	227,816	227,816	227,816	227,816	227,816	227,816	227,816	227,816	227,816

Resource: HEOOPR  
 Res Dept: 946

HEOOPR  
 Overtime:

EOC:  
 HOU

LABOR

Class:

	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Yr Hours:	149.5	157.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	149.5	307.0	307.0	307.0	307.0	307.0	307.0	307.0	307.0	307.0
Yr Total Cost:	4,704	5,215	0	0	0	0	0	0	0	0
Cum Total Cost:	4,704	9,919	9,919	9,919	9,919	9,919	9,919	9,919	9,919	9,919

Resource: MAT300  
 Res Dept: 946

MATERIAL OBJCLASS300  
 Overtime:

EOC:  
 MAT

MATERIAL

Class:

	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Yr Units:	381,000.0	694,317.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Units:	381,000.0	1,075,317.0	1,075,317.0	1,075,317.0	1,075,317.0	1,075,317.0	1,075,317.0	1,075,317.0	1,075,317.0	1,075,317.0
Yr Total Cost:	381,000	713,064	0	0	0	0	0	0	0	0
Cum Total Cost:	381,000	1,094,064	1,094,064	1,094,064	1,094,064	1,094,064	1,094,064	1,094,064	1,094,064	1,094,064

Resource: MPCREP  
 Res Dept: 946

MATL PROP CTRL REP  
 Overtime:

EOC:  
 SAL

LABOR

Class:

	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Yr Hours:	262.4	525.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	262.4	788.0	788.0	788.0	788.0	788.0	788.0	788.0	788.0	788.0
Yr Total Cost:	8,481	17,880	0	0	0	0	0	0	0	0
Cum Total Cost:	8,481	26,361	26,361	26,361	26,361	26,361	26,361	26,361	26,361	26,361

Resource: MVOOPR  
 Res Dept: 946

MOTOR VEHICLE OPER  
 Overtime:

EOC:  
 HOU

LABOR

Class:

<b>Resource:</b>	<b>OPRMGR</b>	<b>OPERATIONS MGR</b>													<b>LABOR</b>	
<b>Res Dept:</b>	<b>946</b>	<b>Overtime:</b>													<b>EOC:</b>	<b>SAL</b>
			Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-				
Yr Hours:	Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10						
Cum Hours:	1,833.8	2,721.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0						
Yr Total Cost:	1,833.8	4,555.0	4,555.0	4,555.0	4,555.0	4,555.0	4,555.0	4,555.0	4,555.0	4,555.0						
Cum Total Cost:	52,924	82,663	0	0	0	0	0	0	0	0						
	52,924	135,587	135,587	135,587	135,587	135,587	135,587	135,587	135,587	135,587						

<b>Resource:</b>	<b>PROWHA</b>	<b>PROF WAREHOUSE ATTN</b>													<b>LABOR</b>	
<b>Res Dept:</b>	<b>946</b>	<b>Overtime:</b>													<b>EOC:</b>	<b>HOU</b>
			Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-				
Yr Hours:	Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10						
Cum Hours:	829.4	1,361.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0						
Yr Total Cost:	829.4	2,191.0	2,191.0	2,191.0	2,191.0	2,191.0	2,191.0	2,191.0	2,191.0	2,191.0						
Cum Total Cost:	43,361	74,927	0	0	0	0	0	0	0	0						
	43,361	118,288	118,288	118,288	118,288	118,288	118,288	118,288	118,288	118,288						

<b>Resource:</b>	<b>QACTEC</b>	<b>QA/QC TECH</b>													<b>LABOR</b>	
<b>Res Dept:</b>	<b>946</b>	<b>Overtime:</b>													<b>EOC:</b>	<b>SAL</b>
			Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-				
Yr Hours:	Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10						
Cum Hours:	193.1	333.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0						
Yr Total Cost:	193.1	527.0	527.0	527.0	527.0	527.0	527.0	527.0	527.0	527.0						
Cum Total Cost:	5,131	9,338	0	0	0	0	0	0	0	0						
	5,131	14,469	14,469	14,469	14,469	14,469	14,469	14,469	14,469	14,469						

<b>Resource:</b>	<b>RADTEC</b>	<b>RAD TECH</b>													<b>LABOR</b>	
<b>Res Dept:</b>	<b>946</b>	<b>Overtime:</b>													<b>EOC:</b>	<b>SAL</b>
			Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-				
Yr Hours:	Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10						
Cum Hours:	428.5	932.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0						
Yr Total Cost:	428.5	1,361.0	1,361.0	1,361.0	1,361.0	1,361.0	1,361.0	1,361.0	1,361.0	1,361.0						
Cum Total Cost:	13,233	30,309	0	0	0	0	0	0	0	0						
	13,233	43,542	43,542	43,542	43,542	43,542	43,542	43,542	43,542	43,542						

<b>Resource:</b>	<b>TRNLAB</b>	<b>TRANSPORT LABORER</b>													<b>LABOR</b>	
<b>Res Dept:</b>	<b>946</b>	<b>Overtime:</b>													<b>EOC:</b>	<b>HOU</b>
			Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-				
Yr Hours:	Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10						
Cum Hours:	865.5	1,499.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0						
Yr Total Cost:	865.5	2,365.0	2,365.0	2,365.0	2,365.0	2,365.0	2,365.0	2,365.0	2,365.0	2,365.0						
Cum Total Cost:	29,496	53,790	0	0	0	0	0	0	0	0						
	29,496	83,286	83,286	83,286	83,286	83,286	83,286	83,286	83,286	83,286						



Yr Hours:	Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10
Cum Hours:	387.2	666.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	387.2	1,054.0	1,054.0	1,054.0	1,054.0	1,054.0	1,054.0	1,054.0	1,054.0	1,054.0
Cum Total Cost:	9,556	17,322	0	0	0	0	0	0	0	0
	9,556	26,878	26,878	26,878	26,878	26,878	26,878	26,878	26,878	26,878

GRAND TOTALS:

Yr Hours:	Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-
Cum Hours:	Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10
Yr Total Cost:	8,578.2	12,268.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Total Cost:	652,358	20,847.0	20,847.0	20,847.0	20,847.0	20,847.0	20,847.0	20,847.0	20,847.0	20,847.0
	652,358	1,127,851	0	0	0	0	0	0	0	0
		1,780,209	1,780,209	1,780,209	1,780,209	1,780,209	1,780,209	1,780,209	1,780,209	1,780,209

CAM David Pami REVIEW TEAM David Pami CONTROL TEAM Mary E Stone

more for



**JUWPB**

**FISSILE EXCEPTED & DEPLETED METALS**



DATE: 06-Sep-01  
PROJECT MGR: Donald Paine  
CAM: Donald Paine  
PREPARED BY: Mary Stone  
FISCAL YEAR: 2001-2003

S:\EST\_FORMS\JLWWPB\_MOD.xls

**EXCLUDES G/A AND ESCALATION COSTS**

	Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-
	Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10
Yr Hours:	2,058.9	6,648.3	8,668.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	2,058.9	8,707.2	17,375.3	17,375.3	17,375.3	17,375.3	17,375.3	17,375.3	17,375.3	17,375.3
Yr Total Cost:	59,420	201,957	278,906	0	0	0	0	0	0	0
Cum Total Cost:	59,420	261,377	540,283	540,283	540,283	540,283	540,283	540,283	540,283	540,283

<b>Resource:</b>	<b>OPRMGR</b>	<b>Class:</b>	<b>EOC:</b>	<b>LABOR</b>						
<b>Res Dept:</b>	<b>946</b>		<b>SAL</b>							
<b>OverTime:</b>										
	Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-
	Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10
Yr Hours:	700.2	2,265.9	3,186.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	700.2	2,966.1	6,152.1	6,152.1	6,152.1	6,152.1	6,152.1	6,152.1	6,152.1	6,152.1
Yr Total Cost:	36,604	124,692	185,701	0	0	0	0	0	0	0
Cum Total Cost:	36,604	161,296	346,998	346,998	346,998	346,998	346,998	346,998	346,998	346,998

<b>Resource:</b>	<b>PROWHA</b>	<b>Class:</b>	<b>EOC:</b>	<b>LABOR</b>						
<b>Res Dept:</b>	<b>946</b>		<b>HOU</b>							
<b>OverTime:</b>										
	Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-
	Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10
Yr Hours:	96.4	433.1	867.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	96.4	529.5	1,396.7	1,396.7	1,396.7	1,396.7	1,396.7	1,396.7	1,396.7	1,396.7
Yr Total Cost:	2,562	12,112	25,688	0	0	0	0	0	0	0
Cum Total Cost:	2,562	14,674	40,361	40,361	40,361	40,361	40,361	40,361	40,361	40,361

<b>Resource:</b>	<b>QACTEC</b>	<b>Class:</b>	<b>EOC:</b>	<b>LABOR</b>						
<b>Res Dept:</b>	<b>946</b>		<b>SAL</b>							
<b>OverTime:</b>										
	Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-
	Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10
Yr Hours:	502.7	1,812.5	2,617.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	502.7	2,315.3	4,933.1	4,933.1	4,933.1	4,933.1	4,933.1	4,933.1	4,933.1	4,933.1
Yr Total Cost:	15,525	58,914	90,126	0	0	0	0	0	0	0
Cum Total Cost:	15,525	74,439	164,565	164,565	164,565	164,565	164,565	164,565	164,565	164,565

<b>Resource:</b>	<b>RADTEC</b>	<b>Class:</b>	<b>EOC:</b>	<b>LABOR</b>						
<b>Res Dept:</b>	<b>946</b>		<b>SAL</b>							
<b>OverTime:</b>										
	Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-
	Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10
Yr Hours:	1,104.3	3,462.1	4,558.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	1,104.3	4,566.3	9,125.1	9,125.1	9,125.1	9,125.1	9,125.1	9,125.1	9,125.1	9,125.1
Yr Total Cost:	37,633	124,191	173,213	0	0	0	0	0	0	0
Cum Total Cost:	37,633	161,824	335,037	335,037	335,037	335,037	335,037	335,037	335,037	335,037

<b>Resource:</b>	<b>TRNLAB</b>	<b>Class:</b>	<b>EOC:</b>	<b>LABOR</b>						
<b>Res Dept:</b>	<b>946</b>		<b>HOU</b>							
<b>OverTime:</b>										
	Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-
	Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10
Yr Hours:	186.1	858.7	1,747.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	186.1	1,044.7	2,792.1	2,792.1	2,792.1	2,792.1	2,792.1	2,792.1	2,792.1	2,792.1

Yr Total Cost  
Cum Total Cost:

4,592	22,306	48,080	0	0	0	0	0	0	0	0
4,592	26,898	74,978	74,978	74,978	74,978	74,978	74,978	74,978	74,978	74,978

GRAND TOTALS:

Yr Hours:  
Cum Hours:  
Yr Total Cost:  
Cum Total Cost:

Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
10,106.1	32,045.7	39,929.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10,106.1	42,151.7	82,081.2	82,081.2	82,081.2	82,081.2	82,081.2	82,081.2	82,081.2	82,081.2
505,515	1,581,396	1,861,282	0	0	0	0	0	0	0
505,515	2,086,911	3,948,193	3,948,193	3,948,193	3,948,193	3,948,193	3,948,193	3,948,193	3,948,193

*Rodd Tani*

CAM

REVIEW TEAM

CONTROL TEAM

*Matt Foster*

*Mary E Stone*





**JUWPC**

**RCRA MATERIAL & SEALED SOURCES**



**Fluor Fernald, Inc.**

ESTIMATE SUPPORT WORKSHEET  
FOR ACTIVITY BASED ESTIMATING  
\*\*\*\* STATED IN FY01 DOLLARS \*\*\*\*  
(1 FTE EQUALS 1747 HOURS)

DATE: 06-Sep-01  
PROJECT MGR: Donald Paine  
CAM: Donald Paine  
PREPARED BY: Mary Stone  
FISCAL YEAR: 2002-2003

PBS: 08  
WBS: 1.1.J  
CTRL ACCT: JUWP  
CHARGE NO: JUWPC  
COMMENT# R1-F08-002, R1-F08-003, 535, E724

<b>Resource:</b>	<b>ENSTEC</b>	<b>ENVIR SCIENTIST TECH</b>	<b>EOC:</b>	<b>LABOR</b>	
<b>Res Dept:</b>	<b>946</b>	<b>Overtime:</b>	<b>SAL</b>		
		<b>Class:</b>			
Yr Hours:	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05
Cum Hours:	0.0 0.0	250.0 250.0	0.0 250.0	0.0 250.0	0.0 250.0
Yr Total Cost:	0	7,452	0	0	0
Cum Total Cost:	0	7,452	7,452	7,452	7,452
				Oct 07- Sep 08	Oct 08- Sep 09
				250.0 250.0	250.0 250.0
				0	0
				7,452	7,452
					Oct 09- Sep 10
					250.0 0
					7,452

<b>Resource:</b>	<b>HAZWAT</b>	<b>HAZWAT</b>	<b>EOC:</b>	<b>LABOR</b>	
<b>Res Dept:</b>	<b>946</b>	<b>Overtime:</b>	<b>HOU</b>		
		<b>Class:</b>			
Yr Hours:	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05
Cum Hours:	0.0 0.0	4,552.1 4,552.1	14,429.9 18,982.0	0.0 18,982.0	0.0 18,982.0
Yr Total Cost:	0	137,946	463,167	0	0
Cum Total Cost:	0	137,946	601,113	601,113	601,113
				Oct 07- Sep 08	Oct 08- Sep 09
				18,982.0 18,982.0	18,982.0 18,982.0
				0	0
				601,113	601,113
					Oct 09- Sep 10
					18,982.0 0
					601,113

<b>Resource:</b>	<b>HEOOPR</b>	<b>HEAVY EQUIP OPERATOR</b>	<b>EOC:</b>	<b>LABOR</b>	
<b>Res Dept:</b>	<b>946</b>	<b>Overtime:</b>	<b>HOU</b>		
		<b>Class:</b>			
Yr Hours:	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05
Cum Hours:	0.0 0.0	0.0 0.0	218.0 218.0	0.0 218.0	0.0 218.0
Yr Total Cost:	0	0	7,646	0	0
Cum Total Cost:	0	0	7,646	7,646	7,646
				Oct 07- Sep 08	Oct 08- Sep 09
				218.0 218.0	218.0 218.0
				0	0
				7,646	7,646
					Oct 09- Sep 10
					218.0 0
					7,646

<b>Resource:</b>	<b>INDHYG</b>	<b>INDUSTRIAL HYGIENIST</b>	<b>EOC:</b>	<b>LABOR</b>	
<b>Res Dept:</b>	<b>946</b>	<b>Overtime:</b>	<b>SAL</b>		
		<b>Class:</b>			
Yr Hours:	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05
Cum Hours:	0.0 0.0	0.0 0.0	218.0 218.0	0.0 218.0	0.0 218.0
Yr Total Cost:	0	0	11,282	0	0
Cum Total Cost:	0	0	11,282	11,282	11,282
				Oct 07- Sep 08	Oct 08- Sep 09
				218.0 218.0	218.0 218.0
				0	0
				11,282	11,282
					Oct 09- Sep 10
					218.0 0
					11,282

<b>Resource:</b>	<b>MAT300</b>	<b>MATERIAL OBJCLASS300</b>	<b>EOC:</b>	<b>MATERIAL</b>
<b>Res Dept:</b>	<b>946</b>	<b>Overtime:</b>	<b>MAT</b>	
		<b>Class:</b>		

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Resource: MPCREP  
Res Dept: 946

Yr Units:	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Cum Units:	0.0	154,882.2	196,240.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	0.0	154,882.2	351,123.0	351,123.0	351,123.0	351,123.0	351,123.0	351,123.0	351,123.0	351,123.0
Cum Total Cost:	0	159,064	206,981	366,045	366,045	366,045	366,045	366,045	366,045	366,045

Resource: MATL PROP CTRL REP  
Res Dept: 946

Yr Hours:	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Cum Hours:	0.0	214.6	1,007.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	0.0	214.6	1,222.0	1,222.0	1,222.0	1,222.0	1,222.0	1,222.0	1,222.0	1,222.0
Cum Total Cost:	0	7,300	36,301	43,601	43,601	43,601	43,601	43,601	43,601	43,601

Resource: MVOOPR  
Res Dept: 946

Yr Hours:	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Cum Hours:	0.0	1,763.0	3,461.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	0.0	1,763.0	5,224.0	5,224.0	5,224.0	5,224.0	5,224.0	5,224.0	5,224.0	5,224.0
Cum Total Cost:	0	53,554	111,362	164,916	164,916	164,916	164,916	164,916	164,916	164,916

Resource: OPRMGR  
Res Dept: 946

Yr Hours:	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Cum Hours:	0.0	1,142.0	1,360.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	0.0	1,142.0	2,502.0	2,502.0	2,502.0	2,502.0	2,502.0	2,502.0	2,502.0	2,502.0
Cum Total Cost:	0	62,843	79,270	142,113	142,113	142,113	142,113	142,113	142,113	142,113

Resource: PROWHA  
Res Dept: 946

Yr Hours:	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Cum Hours:	0.0	67.6	93.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	0.0	67.6	161.0	161.0	161.0	161.0	161.0	161.0	161.0	161.0
Cum Total Cost:	0	1,891	2,767	4,657	4,657	4,657	4,657	4,657	4,657	4,657

Resource: QACTEC  
Res Dept: 946

Yr Hours:	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Cum Hours:	0.0	269.4	1,142.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	0.0	269.4	1,142.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Total Cost:	0	269.4	1,142.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Cum Hours:	0.0	269.4	1,412.0	1,412.0	1,412.0	1,412.0	1,412.0
Yr Total Cost:	0	8,757	39,337	0	0	0	0
Cum Total Cost:	0	8,757	48,094	48,094	48,094	48,094	48,094

[illegible]

Resource:	SERVSUB	SUBS	Class:		SUBCONTRACTORS											
Res Dept:	946	Overtime:			EOC:		SUB									
			Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-				
			Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10				
Yr Units:			0.0	150,000.0	18,962.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Cum Units:			0.0	150,000.0	168,962.2	168,962.2	168,962.2	168,962.2	168,962.2	168,962.2	168,962.2	168,962.2				
Yr Total Cost:			0	154,050	20,000	0	0	0	0	0	0	0				
Cum Total Cost:			0	154,050	174,050	174,050	174,050	174,050	174,050	174,050	174,050	174,050				

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**GRAND TOTALS:**

[illegible]

CAM

Russell Davis

REVIEW TEAM

CONTROL TEAM

May 2 1891



**JUWPD**

**FISSILE COMPOUNDS**





DATE: 06-Sep-01  
PROJECT MGR: Donald Patton  
CAM: Donald Patton  
PREPARED BY: Mary Stoner  
FISCAL YEAR: 2002-2003

ESTIMATE SUPPORT WORKSHEET  
FOR ACTIVITY BASED ESTIMATING  
\*\*\*\* STATED IN FY01 DOLLARS \*\*\*\*  
(1 FTEE EQUALS 1747 HOURS)

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Resource:	MVOOPR	EOC:	LABOR
Res Dept:	946	Class:	HOU
		MOTOR VEHICLE OPER	
		Overtime:	

Resource: OPRMGR  
Res Dept: 946  
Class: OPERATIONS MGR  
EOC: SAL  
LABOR

Resource: RADTEC  
Res Dept: 946

EOC: SAL  
Class: Overtime: RAD TECH

**GRAND TOTALS:**

CAM \_\_\_\_\_ REVIEW TEAM \_\_\_\_\_ CONTROL TEAM \_\_\_\_\_ Mary E Stone

**JUWPE**

**FISSILE METALS**



**Fluor Fernald, Inc.**

DATE: 06-Sep-01  
PROJECT MGR: Donald Pa  
CAM: Donald Pa  
PREPARED BY: Mary Stonn  
FISCAL YEAR: 2001-2005

ESTIMATE SUPPORT WORKSHEET  
FOR ACTIVITY BASED ESTIMATING  
\*\*\*\*\* STATED IN FY01 DOLLARS \*\*\*\*\*  
(1 FTE EQUALS 1747 HOURS)

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	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Yr Hours:	111.0	4,028.4	10,566.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	111.0	4,139.4	14,706.0	14,706.0	14,706.0	14,706.0	14,706.0	14,706.0	14,706.0	14,706.0
Yr Total Cost:	3,204	122,373	339,988	0	0	0	0	0	0	0
Cum Total Cost:	3,204	125,576	465,565	465,565	465,565	465,565	465,565	465,565	465,565	465,565

Resource: OPRMGR  
Res Dept: 946

OPERATIONS MGR  
Overtime:

Class: LABOR

EOC: SAL

	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Yr Hours:	111.0	1,472.9	3,584.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	111.0	1,583.9	5,168.0	5,168.0	5,168.0	5,168.0	5,168.0	5,168.0	5,168.0	5,168.0
Yr Total Cost:	5,804	81,050	208,906	0	0	0	0	0	0	0
Cum Total Cost:	5,804	86,854	295,760	295,760	295,760	295,760	295,760	295,760	295,760	295,760

Resource: PROWHA  
Res Dept: 946

PROF WAREHOUSE ATTN  
Overtime:

Class: LABOR

EOC: HOU

	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Yr Hours:	0.0	233.9	712.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	0.0	233.9	946.0	946.0	946.0	946.0	946.0	946.0	946.0	946.0
Yr Total Cost:	0	6,540	21,096	0	0	0	0	0	0	0
Cum Total Cost:	0	6,540	27,636	27,636	27,636	27,636	27,636	27,636	27,636	27,636

Resource: QACTEC  
Res Dept: 946

QA/QC TECH  
Overtime:

Class: LABOR

EOC: SAL

	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Yr Hours:	0.0	1,091.0	2,985.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	0.0	1,091.0	4,076.0	4,076.0	4,076.0	4,076.0	4,076.0	4,076.0	4,076.0	4,076.0
Yr Total Cost:	0	35,462	102,767	0	0	0	0	0	0	0
Cum Total Cost:	0	35,462	138,229	138,229	138,229	138,229	138,229	138,229	138,229	138,229

Resource: RADTEC  
Res Dept: 946

RAD TECH  
Overtime:

Class: LABOR

EOC: SAL

	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Yr Hours:	111.0	2,202.0	5,258.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	111.0	2,313.1	7,571.0	7,571.0	7,571.0	7,571.0	7,571.0	7,571.0	7,571.0	7,571.0
Yr Total Cost:	3,783	78,992	199,779	0	0	0	0	0	0	0
Cum Total Cost:	3,783	82,775	282,553	282,553	282,553	282,553	282,553	282,553	282,553	282,553

Resource: SERVSUB  
Res Dept: 946

SUBS  
Overtime:

Class: SUBCONTRACTORS

EOC: SUB

	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Yr Units:	0.0	778,967.9	1,374,760.7	2,305,717.1	4,639,246.3	0.0	0.0	0.0	0.0	0.0
Cum Units:	0.0	778,967.9	2,153,728.6	4,459,445.6	9,098,692.0	9,098,692.0	9,098,692.0	9,098,692.0	9,098,692.0	9,098,692.0



0  
9,921,000

TRANSPORT LABORER	EOC:	LABOR
Overtime:	Class:	HOU

Oct 09-	
Sep 10	0.0
	1,893.0
	0
	51,368

Oct 09-	
Sep 10	0.0
	71,376.0
	0
	3,759,060

CONTROL TEAM



  
 CONTROL TEAM

**EXCLUDES G/A AND ESCALATION COSTS**





## **SECTION 3**

### **5.0 RISK PLAN**



# Risk/Opportunity Identification and Analysis Form

Project: Uranium Waste Disposition (UWD)		PBS Number: 8		Total Baseline Dollars (Minimum Case):		\$21,717,005				
Evaluator: A. Neiling		Date: April 26, 2001		WBS Number: 1.1.J.C						
CAM: M. Frost		Date: April 26, 2001		Control Account Number: JUMP						
Project Task	Risk and/or Opportunity	Potential Impact	Internal Or External Driver	Impact Cost \$ (Maximum Case)	Risk Level	Risk Probability %	Risk Probability Level	Probable Cost \$ (Likeliest Case)	Risk Critical Value	Risk Handling Strategy
UWD RCRA Inventory	Reject product material is declared waste, and subsequent characterization deems it to be hazardous waste requiring treatment prior to disposal.	Additional cost for treatment of added RCRA inventory	Internal	\$7,500,000	4	40	3	\$3,000,000	7	Accept
RCRA waste treatment	Required treatment of waste not recharacterized as Non-RCRA	\$5000/drum for 388 drums	Internal	\$1,940,000	3	20	2	\$388,000	2	Accept
Waste packaging of oversized materials	Oversized materials require size reduction	Additional cost for design, construction, start-up and operation of a size reduction process.	Internal	\$750,000	2	50	3	\$375,000	2	Accept
Decanting water from container	Decant water can not be dispositioned through AWWT	Additional cost for packaging, shipment, and off-site treatment of decant water.	Internal	\$500,000	2	10	1	\$50,000	1	Accept
Enriched material co-packaging with LLW	Not enough FEMP LLW is available for fissile material co-packaging.	Additional cost for enrichment blending at an off-site facility to meet the NTS WAC.	Internal	\$9,500,000	4	50	4	\$4,750,000	8	Accept
Waste packaging in FEMP building	FEMP building not available for materials packaging	Additional schedule and cost to relocate the packaging operations to another FEMP facility	Internal	\$750,000	2	10	2	\$75,000	2	Accept
Waste Disposal	Delays in NTS profile approval.	4 month schedule delay	External	\$1,000,000	3	50	3	\$500,000	3	Accept
UWD project support	Project schedule extension due to complications associated with repackaging and shipment of uranium materials.	12 month schedule delay, additional project support	Internal	\$1,500,000	3	50	3	\$750,000	4	Accept
Waste packaging	SSR required for packaging start-up	3 month schedule delay, additional support cost and labor cost.	Internal	\$450,000	2	40	3	\$180,000	2	Avoid

Project: Uranium Waste Disposition (UWD)			PBS Number: 8			Total Baseline Dollars (Minimum Case): \$21,717,005		
Evaluator: A. Neiling			WBS Number: 1.1.J.C					
Date: April 26, 2001			Control Account Number: JUWP					
Date: April 26, 2001			Internal Or External Driver					
Risk and/or Opportunity			Potential Impact					
Project Task	Risk	Impact Cost \$ (Maximum Case)	Risk Impact Level	Risk Probability %	Risk Probability Level	Probable Cost \$ (Likeliest Case)	Risk Critical Value	Risk Handling Strategy
Waste characterization	Increase analytical cost and increased number of samples required for characterization	\$300,000	2	30	2	\$90,000	2	Accept
Waste Acceptance at NFS	NFS cannot accept fissile metals for processing and reuse or disposal	\$1,000,000	3	30	2	\$300,000	3	Accept
Waste/Soil Blending	Enriched compounds can not be blended in WPPAP process to meet DOT and/or Envirocare requirements	\$5,500,000	5	20	2	\$1,100,000	8	Accept
Waste packaging	Waste container procurement or delivery delays	\$450,000	2	60	4	\$225,000	3	Accept
Process changes for hydrogen generating & pyrophoric material	Additional requirements & costly steps to movement and packaging operations	\$688,000	2	20	2	\$137,600	2	Accept
Repackaging compounds cost more due to repackaging of the material and/or Vacuum Transfer Equipment does not work as expected	Slower, manual repackaging of the material	\$4,100,000	3	40	2	\$1,640,000	3	Accept
Total:			Total:			Total: \$13,560,600		
UWD RCRA treatment	RCRA treatment off-site not feasible	\$10,000,000	5	40	3	\$4,000,000	10	
Waste Disposal	NTS can not accept fissile waste for disposal	\$8,600,000	4	30	2	\$2,550,000	5	
DOE Mound	Characterization of the FEMP sealed sources will have to be done.	\$2,800,000	3	30	2	\$840,000	3	